United States
Department of
Agriculture

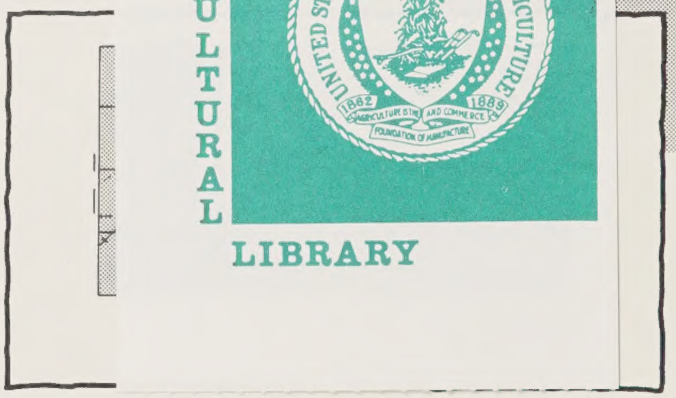
Soil
Conservation
Service

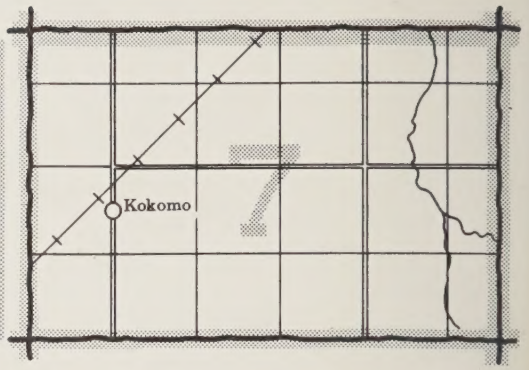
In cooperation with
United States Department of
Agriculture, Forest Service,
and Mississippi Agricultural
and Forestry
Experiment Station

Soil Survey of Jones County, Mississippi

HOW TO USE

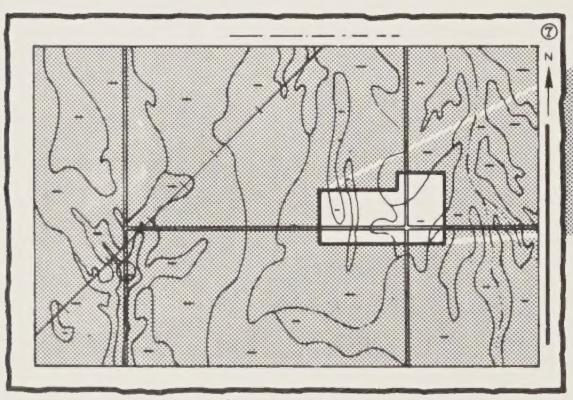
1. Locate you
the "Index

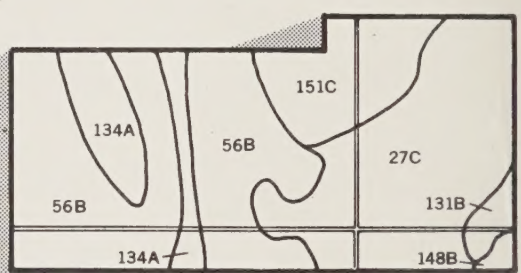




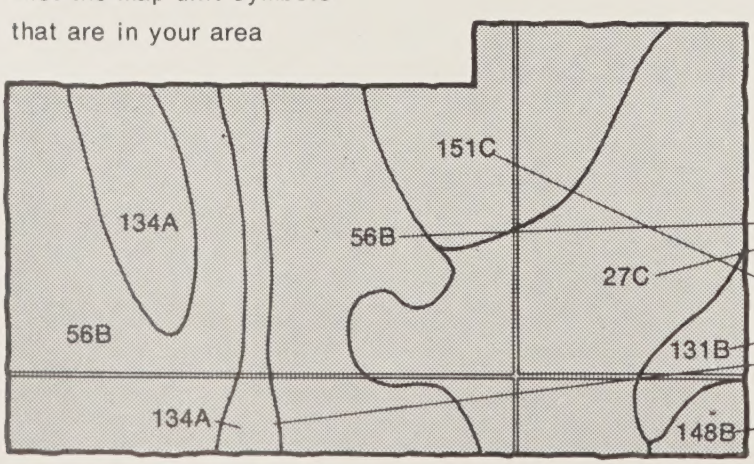
2. Note the number of the map sheet and turn to that sheet.

3. Locate your area of interest on the map sheet.





4. List the map unit symbols that are in your area

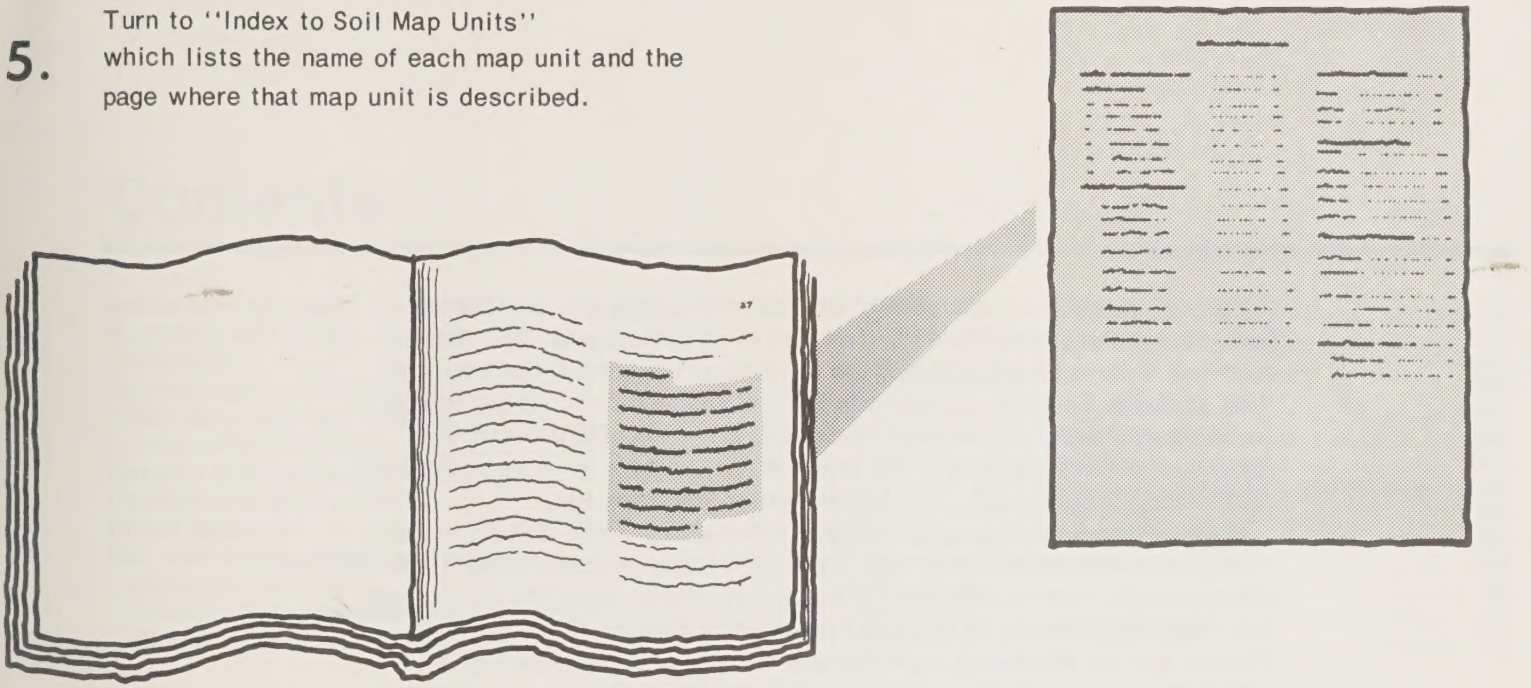


Symbols

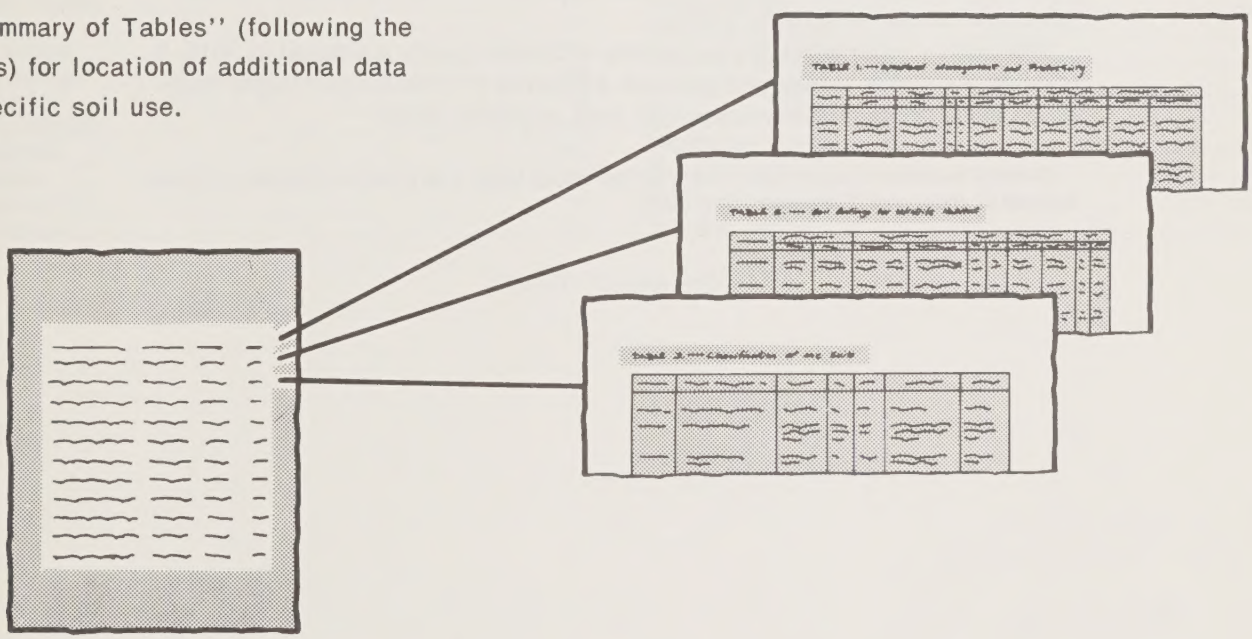
27C
56B
131B
134A
148B
151C

THIS SOIL SURVEY

5. Turn to "Index to Soil Map Units" which lists the name of each map unit and the page where that map unit is described.



6. See "Summary of Tables" (following the Contents) for location of additional data on a specific soil use.



7. Consult "Contents" for parts of the publication that will meet your specific needs. This survey contains useful information for farmers or ranchers, foresters or agronomists; for planners, community decision makers, engineers, developers, builders, or homebuyers; for conservationists, recreationists, teachers, or students; for specialists in wildlife management, waste disposal, or pollution control.

This soil survey is a publication of the National Cooperative Soil Survey, a joint effort of the United States Department of Agriculture and other federal agencies, state agencies including the Agricultural Experiment Stations, and local agencies. The Soil Conservation Service has leadership for the federal part of the National Cooperative Soil Survey. In line with Department of Agriculture policies, benefits of this program are available to all, regardless of race, color, national origin, sex, religion, marital status, or age.

Major fieldwork for this soil survey was completed in 1983. Soil names and descriptions were approved in 1984. Unless otherwise indicated, statements in this publication refer to conditions in the survey area in 1984. This soil survey was made cooperatively by the Soil Conservation Service, the U.S. Forest Service, and the Mississippi Agricultural and Forestry Experiment Station. It is part of the technical assistance furnished to the Jones County Soil and Water Conservation District.

Soil maps in this survey may be copied without permission. Enlargement of these maps, however, could cause misunderstanding of the detail of mapping. If enlarged, maps do not show the small areas of contrasting soils that could have been shown at a larger scale.

This survey supersedes the soil survey of Jones County published in 1915. It updates the earlier survey and provides additional information and larger maps on an aerial photo base that show the soils in greater detail.

Cover: Plantation of slash pine on Malbis fine sandy loam, 2 to 5 percent slopes, has been thinned to allow room for continued growth.

Contents

Soil Series

Issued October 1986

Index to Map Units

Summary of Tables

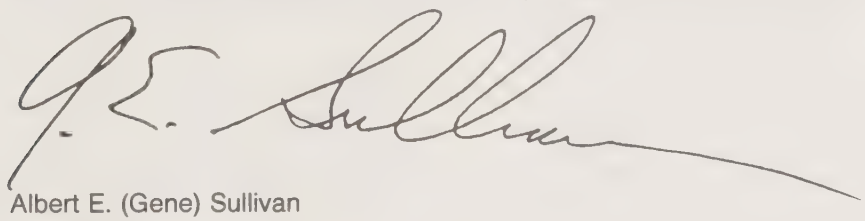
Foreword

This soil survey contains information that can be used in land-planning programs in Jones County. It contains predictions of soil behavior for selected land uses. The survey also highlights limitations and hazards inherent in the soil, improvements needed to overcome the limitations, and the impact of selected land uses on the environment.

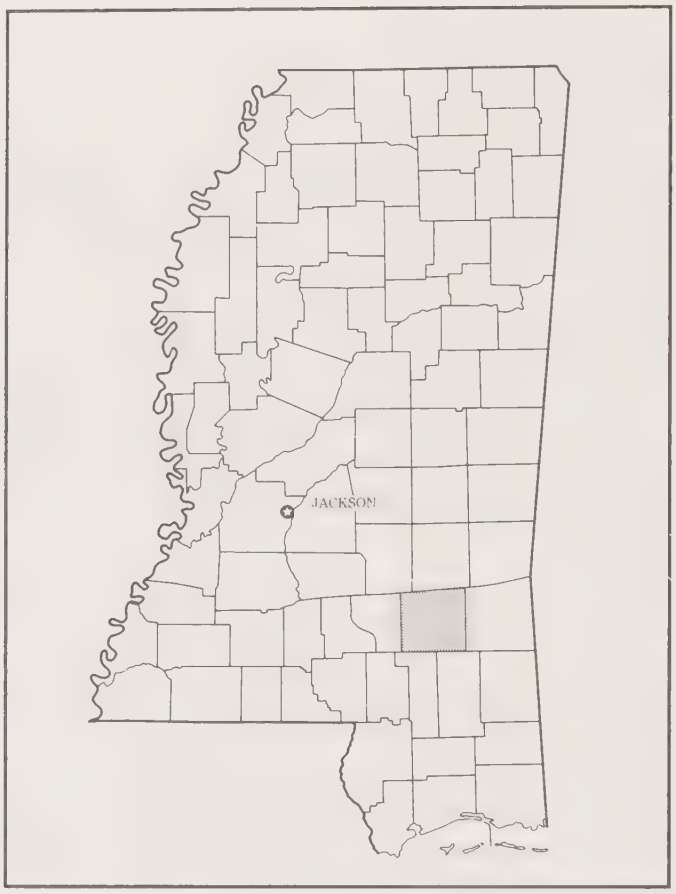
This soil survey is designed for many different users. Farmers, ranchers, foresters, and agronomists can use it to evaluate the potential of the soil and the management needed for maximum food and fiber production. Planners, community officials, engineers, developers, builders, and home buyers can use the survey to plan land use, select sites for construction, and identify special practices needed to insure proper performance. Conservationists, teachers, students, and specialists in recreation, wildlife management, waste disposal, and pollution control can use the survey to help them understand, protect, and enhance the environment.

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are shallow to bedrock. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

These and many other soil properties that affect land use are described in this soil survey. Broad areas of soils are shown on the general soil map. The location of each soil is shown on the detailed soil maps. Each soil in the survey area is described. Information on specific uses is given for each soil. Help in using this publication and additional information are available at the local office of the Soil Conservation Service or the Cooperative Extension Service.



Albert E. (Gene) Sullivan
State Conservationist
Soil Conservation Service



Location of Jones County in Mississippi.

Soil Survey of Jones County, Mississippi

By Rex E. Davis, Thomas T. Kilpatrick, and
Margaret L. McArthur, Soil Conservation Service,
and Marvin L. Weeks, Forest Service

United States Department of Agriculture, Soil Conservation Service
In cooperation with
United States Department of Agriculture, Forest Service, and
Mississippi Agricultural and Forestry Experiment Station

JONES COUNTY is in the southeast part of Mississippi. It covers an area of about 706 square miles, or about 451,840 acres. The county has two county seats of government, one at Laurel in the north central part of the county and the other at Ellisville near the center of the county. The population of the county in 1980 was 61,912 *(13)*.

The county is about 27 miles from west to east and from north to south, along the Wayne County line. It is bordered by Smith and Jasper Counties to the north, Wayne County to the east, Forrest and Perry Counties to the south, and Covington County to the west. Major streams flow in a southerly direction. Water in Jones County drains into the Leaf River, part of the Pascagoula River Basin.

Names, descriptions, and delineations of soils in Jones County do not fully agree with those on soil maps of adjacent counties. Differences are the result of improvements in the classification of soils, particularly modification or refinement in the soil series concepts; intensity of mapping; or the extent of the soils within the county.

General Nature of the County

This section provides general information about Jones County. It discusses climate, history and development, industry and transportation, farming, and the surface and near-surface geology.

Climate

Prepared by the National Climatic Center, Asheville, North Carolina.

Table 1 gives data on temperature and precipitation for the survey area as recorded at Laurel, Mississippi, in the period 1951 to 1980. Table 2 shows probable dates of the first freeze in fall and the last freeze in spring. Table 3 provides data on length of the growing season.

In winter the average temperature is 48 degrees F, and the average daily minimum temperature is 37 degrees. The lowest temperature on record, which occurred at Laurel on January 25, 1963, is 6 degrees. In summer the average temperature is 81 degrees, and the average daily maximum temperature is 92 degrees. The highest recorded temperature, which occurred on June 15, 1963, is 105 degrees.

Growing degree days are shown in table 1. They are equivalent to "heat units." During the month, growing degree days accumulate by the amount that the average temperature each day exceeds a base temperature (50 degrees F). The normal monthly accumulation is used to schedule plantings of a crop between the last freeze in spring and the first freeze in fall.

The total annual precipitation is 56.29 inches. Of this, 28 inches, or 50 percent, usually falls in April through September. The growing season for most crops falls within this period. In 2 years out of 10, the rainfall in April through September is less than 22 inches. The heaviest 1-day rainfall during the period of record was 6.39 inches at Laurel on December 26, 1973. Thunderstorms occur on about 60 days each year, and most occur in summer.

The average seasonal snowfall is 0.6 inch.

Snowfall is rare. In 90 percent of the winters, there is no measurable snowfall. In 10 percent, the snowfall, usually of short duration, is more than 2 inches. The heaviest 1-day snowfall on record was less than 1 inch.

The average relative humidity in midafternoon is about 55 percent. Humidity is higher at night, and the average at dawn is about 90 percent. The sun shines 65 percent of the time possible in summer and 50 percent in winter. The prevailing wind is from the south. Average windspeed is highest, 8 miles per hour, in spring.

History and Development

Jones County was organized in 1826 when it was formed from parts of Wayne and Covington Counties. The first settlement in the Jones County area was established about 1820 near the site of the present city of Ellisville. The first settlers came from South Carolina and Georgia. The county seat was at Ellisville. The county was subsequently divided into two districts with another county seat at Laurel. Other towns of importance in the county are Sandersville, Eastabutchie, Ovett, Moselle, Soso, Gitano, and Errata.

Industry and Transportation

About 70 manufacturing plants operate in Jones County. They produce lumber and wood products, poultry, meat products, machinery, farm implements, walk-in coolers and freezers, distribution transformers, auto parts, concrete forms, clothing, drilling rigs, and petroleum products.

Jones County is crossed by federal, state, and county highways including Interstate Highway 59 and U.S. Highways 11 and 84. The Pine Belt Regional Airport in Laurel serves Jones County and the surrounding area. Illinois Central Gulf Railroad Company, Norfolk Southern Corporation, and Amtrak provide freight and passenger service to the county.

Farming

Farming is an important part of the economy of Jones County. According to Mississippi State University, the value of farm products in 1979 was 73.8 million dollars. The sale of poultry and eggs accounted for about 61 percent of that figure. Timber is also a major source of income for many people.

Surface and Near-surface Geology

Richard L. Bowen, Ph.D., professor, Department of Geology, University of Southern Mississippi, prepared this section.

Jones County, unlike Forrest, Jasper, Smith, and Wayne Counties, has not been the subject of a county geological report. Only 35 square miles of its nearly 700 square miles has been geologically mapped in detail *(3)*. The area that has been mapped is in the southwestern part of the county. The county geological report for Forrest County was published in 1941; Jasper County, in 1963; Smith County, in 1972; and Wayne County, in 1974 *(5, 6, 7, 8)*.

Physiography

Most of Jones County forms part of the extensive Piney Woods Physiographic Province. A few square miles in the extreme northeast corner of the county are part of the Vicksburg Hills Physiographic Province. The Piney Woods Physiographic Province is rolling hills underlain by dominantly clayey to sandy, weakly indurated, late Cenozoic sediments. This province is cut across by well developed, principal stream valleys that have extensive bottom lands and flood plains. The Vicksburg Hills Physiographic Province has developed upon the partly calcareous strata of the Oligocene Vicksburg Group.

Topography

Elevations in Jones County vary from 120 to 140 feet in the main stream valleys at the south edge of the county to above 400 feet in the northwest corner of the county. More than half of the land area is of the Piney Woods Hills. Slopes are generally less than 6 percent and only occasionally more than 10 to 12 percent. Scattered hilltop flatlands are in divide areas between Leaf River, Tallahala Creek, and Bogue Homa Creek. They are remnants of a much more extensive, nearly flat, upland surface. Locally flat, step-like, stream-cut, terrace remnants are frequently on hillsides. Valley floors generally are at least a half mile wide between valley walls, and on the Leaf River, they can reach 2-1/2 miles across. Most of these valley floors are subject to flooding under prolonged storm conditions. The three principal streams and their tributaries drain southward into the Leaf River part of the Pascagoula River Drainage Basin (Pat Harrison Waterways District).

Surface Geologic Units

Vicksburg Group (Oligocene). Beds of the Oligocene Vicksburg Group crop out sporadically in the northeast corner of Jones County in the Vicksburg Hills. Possibly 60 feet or more of these strata are in surface units. They consist of marls (calcium carbonate content 35 to 65 percent), sands, and silty-clayey beds, and are generally dark in color and contain some to abundant green, sand-grain like glauconite. These beds are marine to estuarine deposits that contain abundant microfossils and macrofossils including oysters, clams, snails, bryozoans, and foraminifers.

Catahoula Formation (Miocene). The Catahoula Formation rests upon the Vicksburg Group and constitutes the strata beneath much of the slope lands and some of the streambeds and streambanks

throughout the county. Perhaps as much as 300 to 400 feet of the beds of the Catahoula Formation are in the county. The formation descends 15 to 30 feet per mile in a southerly to southwesterly direction in the northern part of the county. It descends from 1 foot to 5 feet per mile generally in a southerly direction in the southern part of the county. Some geologists regard the lower beds of this formation as late Oligocene in age, but the whole formation is generally considered to be of Miocene age in publications on Mississippi geology. Neither the base nor the top of this group of sand to silty sands that have interbedded silty-clayey units is clearly defined in surface mapping. In the shallow subsurface, the sandy beds generally are important aquifers that have abundant, good quality water. The upper part of this sequence has 3 to 10 feet, ledge-forming, sandstone beds where it passes without a clear break into the dominantly silty-clayey beds of the overlying Hattiesburg Formation.

Hattiesburg Formation (Miocene). This unit is dominantly light bluish gray to medium olive silty-clayey deposits. It has occasional fine sand lenses and beds and occasional beds of swelling clays that are 6 inches to 5 feet thick. The Hattiesburg Formation varies in thickness to as much as 200 feet in the Piney Woods hills of Jones County. Except where sandy beds occur, it is essentially impermeable and is subject to extensive surface sheetwash during storms. Landslides occur on slopes underlain by this unit in some parts of Jones County. This formation consists of a non-marine deposit that has a small amount of charcoal debris, and it has no known, recognizable fossils. Soils often are less than 1 foot thick on slopes underlain by the Hattiesburg Formation. *Citronelle Formation (Miocene or Early Quaternary).* Poorly indurated sands, ranging from less than 1 foot to more than 150 feet thick, lie upon an irregular surface developed on older deposits. These sands have some locally developed lenses of silty-clayey deposits and many, somewhat sporadically distributed, gravelly parts. Generally an irregularly occurring concretionary unit of secondarily deposited iron oxides, "hardpan," has developed at this basal contact. These sands probably correlate in part with the Citronelle Formation of southwestern Alabama and presumably accumulated sometime between Miocene and Early Pleistocene times. They do not have diagnostic fossils, and they constitute a complex of channel sands and gravels and overbank deposits made by a collection of frequently migrating streams, which in the past developed an enormous alluvial plain over much of Mississippi and states to the east. These deposits are frequently stained in shades of red, yellow, and orange produced by deposition of iron oxides by migrating ground waters.

Alluvium (Late Quaternary). The stream systems now present in Jones County were established as a consequence of Quaternary uplift and the development of a new set of stream systems unrelated to those that formed the alluvial plain complex of the Citronelle Formation. As these new streams developed, they cut down in pulses through the older alluvial plain complex. The pulses are recorded in the terrace forms on the sides of hill slopes. Most of these terraces are cut surfaces, and only rarely is there a veneer of as much as 1-1/2 feet of "terrace deposits" found as such surfaces. However, collections of sand and gravel that form the modern alluvium are locally along the valley floors of main tributaries and extensively beside the channels of the Leaf River, Tallahala Creek, and Bogue Homo Creek. This material is active and subject to retransport and deposition during major flooding. Many active and abandoned sand and gravel pits are along these stream bottoms and on the upland slopes and hilltops where the Citronelle Formation deposits are rich in gravel or have clean sand bodies.

How This Survey Was Made

This survey was made to provide information about the soils in the survey area. The information includes a description of the soils and their location and a discussion of the suitability, limitations, and management of the soils for specified uses. Soil scientists observed the steepness, length, and shape of slopes; the general pattern of drainage; the kinds of crops and native plants growing on the soils; and the kinds of bedrock. They dug many holes to study the soil profile, which is the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material from which the soil formed. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

The soils in the survey area occur in an orderly pattern that is related to the geology, the landforms, relief, climate, and the natural vegetation of the area. Each kind of soil is associated with a particular kind of landscape or with a segment of the landscape. By observing the soils in the survey area and relating their position to specific segments of the landscape, a soil scientist develops a concept, or model, of how the soils were formed. Thus, during mapping, this model enables the soil scientist to predict with considerable accuracy the kind of soil at a specific location on the landscape.

Commonly, individual soils on the landscape merge into one another as their characteristics gradually change. To construct an accurate soil map, however, soil scientists must determine the boundaries between the soils. They can observe only a limited number of soil profiles. Nevertheless, these observations, supplemented by an understanding of the soil-landscape relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries.

Soil scientists recorded the characteristics of the soil profiles that they studied. They noted soil color, texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, acidity, and other features that enable them to identify soils. After describing the soils in the survey area and determining their properties, the soil scientists assigned the soils to taxonomic classes (units). Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. The system of taxonomic classification used in the United States is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil scientists classified and named the soils in the survey area, they compared the individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

While a soil survey is in progress, samples of some of the soils in the area are generally collected for laboratory analyses and for engineering tests. Soil scientists interpreted the data from these analyses and tests as well as the field-observed characteristics and the soil properties in terms of expected behavior of the soils under different uses. Interpretations for all of the soils were field tested through observation of the soils in different uses under different levels of management. Some interpretations are modified to fit local conditions, and new interpretations sometimes are developed to meet local needs. Data were assembled from other sources, such as research information, production records, and field experience of specialists. For example, data on crop yields under defined levels of management were assembled from farm records and from field or plot experiments on the same kinds of soil.

Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can state with a fairly high degree of probability that a given soil will have a high water table within certain depths in most years, but they cannot assure that a high water table will always be at a specific level in the soil on a specific date.

After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.

Map Unit Composition

A map unit delineation on a soil map represents an area dominated by one major kind of soil or an area dominated by several kinds of soil. A map unit is identified and named according to the taxonomic classification of the dominant soil or soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural objects. In common with other natural objects, they have a characteristic variability in their properties. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of soils of other taxonomic classes. Consequently, every map unit is made up of the soil or soils for which it is named and some soils that belong to other taxonomic classes. In the detailed soil map units, these latter soils are called inclusions or included soils. In the general soil map units, they are called soils of minor extent.

Most inclusions have properties and behavioral patterns similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting (similar) inclusions. They may or may not be mentioned in the map unit descriptions. Other inclusions, however, have properties and behavior divergent enough to affect use or require different management. These are contrasting (dissimilar) inclusions. They generally occupy small areas and cannot be shown separately on the soil maps because of the scale used in mapping. The inclusions of contrasting soils are mentioned in the map unit descriptions. A few inclusions may not have been observed, and consequently are not mentioned in the descriptions, especially where the soil pattern was so complex that it was impractical to make enough observations to identify all of the kinds of soils on the landscape.

The presence of inclusions in a map unit in no way diminishes the usefulness or accuracy of the soil data. The objective of soil mapping is not to delineate pure taxonomic classes of soils but rather to separate the landscape into segments that have similar use and management requirements. The delineation of such landscape segments on the map provides sufficient information for the development of resource plans, but onsite investigation is needed to plan for intensive uses in small areas.

General Soil Map Units

The general soil map at the back of this publication shows broad areas that have a distinctive pattern of soils, relief, and drainage. Each map unit on the general soil map is a unique natural landscape. Typically, a map unit consists of one or more major soils and some minor soils. It is named for the major soils. The soils making up one unit can occur in other units but in a different pattern.

The general soil map can be used to compare the suitability of large areas for general land uses. Areas of suitable soils can be identified on the map. Likewise, areas where the soils are not suitable can be identified.

Because of its small scale, the map is not suitable for planning the management of a farm or field or for selecting a site for a road or a building or other structure. The soils in any one map unit differ from place to place in slope, depth, drainage, and other characteristics that affect management.

Each map unit is rated for *cultivated crops, specialty crops, woodland, urban uses,* and *wildlife habitat*. Cultivated crops are those grown extensively in the survey area. Specialty crops are the vegetables and fruits that generally require intensive management. Woodland refers to areas of native or introduced trees. Urban uses include residential, commercial, and industrial developments. Wildlife habitat includes habitat for openland, woodland, and wetland wildlife.

Dominantly Nearly Level to Steep Soils; on Uplands and Terraces

The soils of the seven general soil map units in this group are on nearly level to gently sloping ridges and sloping to steep hillsides. Eight major soils are in this group. Benndale and Smithdale soils are loamy and well drained. The loamy Freest soils are moderately well drained and are clayey in the lower part of the subsoil. The sandy Heidel and McLaurin soils are well drained. The moderately well drained Malbis soils are loamy and have plinthite nodules in the lower part of the subsoil. The moderately well drained, loamy Savannah soils have a fragipan in the lower part of the subsoil. The loamy, somewhat poorly drained Susquehanna soils have a clayey subsoil that has high shrink-swell potential. Slopes range from 0 to 20 percent. This group makes up about 81.4 percent of the county.

1. Malbis-Smithdale-Savannah

Loamy, moderately well drained and well drained, nearly level to moderately steep soils; on uplands and terraces

The soils in this map unit are mainly in the northwestern, northern, and northeastern parts of Jones County. They are on uplands and terraces consisting of low ridges and sloping to moderately steep hillsides. Most areas are dissected by short drainageways or streams that have narrow flood plains. Slopes range from 0 to 15 percent.

This map unit makes up about 34.5 percent of the county. It is about 25 percent Malbis soils, 22 percent Smithdale soils, 18 percent Savannah soils, and 35 percent soils of minor extent.

Soils of minor extent are the poorly drained Bibb soils on flood plains and the well drained McLaurin soils on higher upland ridges.

Malbis soils are on upland ridges and hillsides. They are loamy, moderately well drained, and have a subsoil horizon that contains more than 5 percent plinthite nodules. Malbis soils formed in loamy marine sediment.

Smithdale soils are on hillsides. They are loamy, well drained soils that formed in loamy marine sediment.

Savannah soils are on upland ridges and hillsides and on terraces. They are loamy, moderately well drained soils that have a dense and compact fragipan. Savannah soils formed in loamy marine and fluvial terrace deposits.

The soils in this map unit are used mainly as cropland and pasture. A smaller acreage is in woodland. Savannah and Malbis soils on nearly level and gently sloping ridges are well suited to row crops, small grains, and truck crops; and are moderately suited to crops on sloping hillsides. Because of steepness of slope, Smithdale soils are poorly suited to cropland.

Malbis and Savannah soils on nearly level and gently sloping ridges are well suited to pasture grasses and legumes for hay and pasture. Smithdale soils are moderately suited to pasture grasses and legumes.

The soils of this map unit are well suited to woodland.

Malbis soils on nearly level and gently sloping ridges have slight limitations for most urban uses. Wetness is a moderate limitation for dwellings with basements. Low strength is a moderate limitation for local roads and streets. The wetness of Savannah soils on nearly level and gently sloping ridges is a moderate limitation for most urban uses. Because of steepness of slope,

Smithdale soils have moderate limitations for most urban uses, and a severe limitation for use as sites for small commercial buildings.

The soils in this map unit have good potential for the development of habitat for openland and woodland wildlife. The potential is very poor for use as habitat for wetland wildlife.

2. Smithdale-McLaurin-Savannah

Loamy and sandy, well drained and moderately well drained, nearly level to moderately steep soils; on uplands and terraces

The soils in this map unit are mainly in the north-central and southwestern parts of Jones County. They are on broad, upland ridges and terraces and short, sloping to moderately steep hillsides. Most areas are dissected by streams that have medium or narrow flood plains. Slopes range from 0 to 15 percent.

This map unit makes up about 5.4 percent of the county. It is about 21 percent Smithdale soils, 21 percent McLaurin soils, 19 percent Savannah soils, and 39 percent soils of minor extent.

Soils of minor extent are the poorly drained Bibb soils on flood plains, the moderately well drained Malbis soils and well drained Ruston soils on upland ridges, and the well drained Heidel soils on hillsides.

Smithdale soils are on hillsides. They are loamy, well drained soils that formed in loamy marine sediment.

McLaurin soils are on upland ridges and hillsides. They are sandy, well drained soils that formed in loamy marine deposits.

Savannah soils are on upland ridges and hillsides and on terraces. They are loamy, moderately well drained soils that have a dense and compact fragipan. Savannah soils formed in loamy marine and fluvial terrace deposits.

The soils in this map unit are used mainly as pasture and cropland. A smaller acreage is in woodland. Smithdale soils are poorly suited to row crops, small grains, and truck crops; and McLaurin soils and Savannah soils on nearly level and gently sloping ridges are well suited to crops.

Smithdale soils are moderately suited to grasses and legumes for hay and pasture. McLaurin soils on gently sloping ridges and Savannah soils are well suited to grasses and legumes.

The soils in this map unit are well suited to woodland.

Because of steepness of slope, Smithdale soils have moderate limitations for most urban uses and a severe limitation for use as sites for small commercial buildings. McLaurin soils on gently sloping ridges have slight limitations for most urban uses. Because of wetness, Savannah soils on nearly level and gently sloping ridges have a moderate limitation for most urban uses.

These soils have good potential for the development of habitat for openland and woodland wildlife. The potential is very poor for use as habitat for wetland wildlife.

3. Malbis-Savannah

Loamy, moderately well drained, nearly level to sloping soils; on uplands and terraces

The soils in this map unit are mainly in the northeastern part of Jones County. They are on ridges and short hillsides. Most areas are dissected by short drainageways that have narrow flood plains. Slopes range from 0 to 8 percent.

This map unit makes up about 14.4 percent of the county. It is about 36 percent Malbis soils, 27 percent Savannah soils, and 37 percent soils of minor extent.

Soils of minor extent are the poorly drained Trebloc soils on flood plains and low stream terraces, the well drained Smithdale and Heidel soils on hillsides, and the well drained Benndale soils on upland ridges and hillsides.

Malbis soils are on upland ridges and hillsides. They are loamy, moderately well drained, and have a subsoil horizon that contains more than 5 percent plinthite nodules. Malbis soils formed in loamy marine sediment.

Savannah soils are on upland ridges and hillsides and on terraces. They are loamy, moderately well drained soils that have a dense and compact fragipan. Savannah soils formed in loamy marine and fluvial terrace deposits.

The soils of this map unit are used mainly as woodland. A smaller acreage is in pasture and cropland. Gently sloping areas of Malbis and Savannah soils are well suited to row crops, small grains, and truck crops. Sloping areas of these soils on hillsides are moderately suited to cropland use.

Malbis soils on nearly level and gently sloping ridges and Savannah soils are well suited to grasses and legumes for hay and pasture.

The soils of this map unit are well suited to woodland.

On nearly level and gently sloping ridges, Malbis soils have slight limitations for most urban uses. Low strength is a moderate limitation for local roads and streets, and wetness is a moderate limitation for use as sites for dwellings with basements. Because of wetness and low strength as it affects local roads and streets, Savannah soils have moderate limitations for most urban uses.

The soils in this map unit have good potential for the development of habitat for openland and woodland wildlife. The potential is very poor for use as habitat for wetland wildlife.

4. Smithdale-McLaurin

Loamy and sandy, well drained, gently sloping to moderately steep soils; on uplands

The soils in this map unit are mainly in the southern, southwestern, and northwestern parts of Jones County. They are on broad ridges that are as much as a fourth mile wide and on sloping to moderately steep hillsides that are dissected by small drainageways and narrow flood plains. Slopes range from 2 to 15 percent.

This map unit makes up about 3.4 percent of the county. It is about 41 percent Smithdale soils, 22 percent McLaurin soils, and 37 percent soils of minor extent.

Soils of minor extent are the well drained Heidel soils on hillsides, the moderately well drained Malbis soils on upland ridges, and the poorly drained Bibb and Trebloc soils on flood plains.

Smithdale soils are on hillsides. They are loamy, well drained soils that formed in loamy marine sediment.

McLaurin soils are on upland ridges and hillsides. They are sandy, well drained soils that formed in loamy marine deposits.

The soils of this map unit are used mainly as woodland. A smaller acreage is in cropland or pasture. Because of steepness of slope and the hazard of erosion, Smithdale soils are poorly suited to row crops, small grains, and truck crops. They are only moderately suited to grasses and legumes for hay and pasture because of low productivity. McLaurin soils in gently sloping areas are well suited to row crops, small grains, truck crops, and grasses and legumes for hay and pasture. The sloping areas of McLaurin soils are moderately suited to these uses.

The soils in this map unit are well suited to use as woodland.

Steepness of slope of the Smithdale soils is a moderate limitation for most urban uses but a severe limitation for sites for small commercial buildings. McLaurin soils have few limitations for urban use.

The soils in this map unit have good potential for development of habitat for openland and woodland wildlife. The potential is very poor for use as habitat for wetland wildlife.

5. Susquehanna-Freest-Benndale

Loamy, somewhat poorly drained to well drained, nearly level to moderately steep soils; on uplands

The soils in this map unit are mainly in the southeastern part of Jones County. They mostly are on rolling uplands, but some areas are on broad, gently sloping hilltops above short, sloping to moderately steep hillsides. A dendritic pattern of small drains and narrow flood plains dissect the landscape. Slopes range from 0 to 15 percent.

This map unit makes up about 9.3 percent of the county. It is about 28 percent Susquehanna soils, 27 percent Freest soils, 10 percent Benndale soils, and 35 percent soils of minor extent.

Soils of minor extent are the moderately well drained Savannah and Malbis soils on ridgetops and hillsides, the well drained Smithdale soils on hillsides, and the poorly drained Trebloc and Bibb soils on flood plains.

Susquehanna soils are on upland ridges and hillsides. These soils are loamy and somewhat poorly drained. They formed in clayey marine sediment.

Freest soils are on upland ridges and hillsides. These soils are loamy and moderately well drained. They formed in loamy and clayey sediment.

Benndale soils are on upland ridges and hillsides and on terraces. These soils are loamy and well drained. They formed in loamy marine deposits or alluvium.

The soils of this map unit are used mainly as woodland. A smaller acreage is in pasture or cropland.

Susquehanna soils are poorly suited to row crops, small grains, and truck crops and moderately suited to grasses and legumes for hay and pasture. The clayey subsoil and low productivity are the main limitations. Freest soils on nearly level and gently sloping ridges are well suited to row crops, small grains, and truck crops and moderately suited to grasses and legumes for hay and pasture. Benndale soils on nearly level and gently sloping ridges are well suited to cropland and pasture grasses and legumes. On strongly sloping hillsides, these soils are poorly suited to cropland and moderately suited to pasture grasses and legumes.

Susquehanna soils are moderately suited to woodland use. Freest and Benndale soils are well suited to this use.

Susquehanna and Freest soils have severe limitations for most urban uses. Shrinking and swelling, low strength as it affects local roads and streets, and wetness are the main limitations. Benndale soils have slight limitations for urban use.

The soils in this map unit have good potential for use as habitat for openland and woodland wildlife. Potential for use as habitat for wetland wildlife is very poor for Susquehanna and Benndale soils and poor for Freest soils.

6. McLaurin-Freest-Susquehanna

Sandy and loamy, well drained to somewhat poorly drained, nearly level to moderately steep soils; on uplands

The soils in this map unit are mainly in the central and south-central parts of Jones County. They are on rolling uplands. Small drains and narrow flood plains dissect the landscape. Slopes are 0 to 15 percent.

This map unit makes up about 13.4 percent of the county. It is about 28 percent McLaurin soils, 27 percent Freest soils, 10 percent Susquehanna soils, and 35 percent soils of minor extent.

Soils of minor extent are the Savannah and Malbis soils on upland ridgetops, the well drained Smithdale soils on hillsides, and the poorly drained Bibb soils on flood plains.

McLaurin soils are on upland ridges and hillsides. They are sandy, well drained soils that formed in loamy marine deposits.

Freest soils are on upland ridges and hillsides. These soils are loamy and moderately well drained. They formed in loamy and clayey sediment.

Susquehanna soils are on upland ridges and hillsides. These soils are loamy and somewhat poorly drained. They formed in clayey marine sediment.

The soils of this map unit are used mainly as woodland. A smaller acreage is in pasture or cropland.

McLaurin and Freest soils on gently sloping ridges are well suited to row crops, small grains, and truck crops. McLaurin soils are well suited to grasses and legumes for hay and pasture, and Freest soils are moderately suited to grasses and legumes. Because of the clayey subsoil and low productivity, Susquehanna soils are poorly suited to cultivated crops and moderately suited to grasses and legumes for hay and pasture.

McLaurin and Freest soils are well suited to woodland use. Susquehanna soils are moderately suited to this use.

McLaurin soils have few limitations for most urban uses. Freest and Susquehanna soils have severe limitations for most urban uses. Shrinking and swelling, wetness, and low strength as it affects local roads and streets are the main limitations.

The soils in this map unit have good potential for use as habitat for openland and woodland wildlife. Potential for use as habitat for wetland wildlife is very poor for McLaurin and Susquehanna soils and poor for Freest soils.

7. McLaurin-Heidel

Sandy, well drained, gently sloping to steep soils; on uplands

The soils in this map unit are mainly in the south-central part of Jones County. They are gently sloping to sloping on broad ridgetops that are as much as a fourth mile wide and are sloping to steep on hillsides that are dissected by small drainageways. Small intermittent streams drain the area. Slopes range from 2 to 20 percent.

This map unit makes up about 1 percent of the county. It is about 58 percent McLaurin soils, 10 percent Heidel soils, and 32 percent soils of minor extent.

Soils of minor extent are the moderately well drained Savannah soils on upland ridges, the well drained Smithdale soils on hillsides, and poorly drained Bibb soils on flood plains.

McLaurin soils are on upland ridges and hillsides. They are sandy, well drained soils that formed in loamy marine deposits.

Heidel soils are on upland ridges and hillsides. They are sandy, well drained soils that formed in loamy sediment.

The soils of this map unit are used mainly as pasture or cropland. A smaller acreage is used as woodland.

McLaurin soils on gently sloping ridges are well suited to row crops, small grains, truck crops, and grasses and legumes for hay and pasture. Because of steepness of slope and moderate productivity, Heidel soils are poorly suited to cropland and moderately suited to pasture grasses and legumes.

The soils in this map unit are well suited to woodland use.

McLaurin soils have few limitations to most urban uses. Because of steepness of slope, Heidel soils have severe limitations to most urban uses.

McLaurin soils have good potential for use as habitat for openland wildlife, and Heidel soils have fair potential. McLaurin and Heidel soils have very poor potential for use as habitat for wetland wildlife. They have good potential for use as habitat for woodland wildlife.

Dominantly Nearly Level to Gently Sloping Soils; on Terraces and Flood Plains

The soils of the five general soil map units in this group are on nearly level to gently sloping flood plains and stream terraces. Eight major soils are in this group. Bibb and Trebloc soils on flood plains are silty and poorly drained. The sandy Bigbee soils are excessively drained and are on low terraces and flood plains. The loamy, well drained Cahaba soils are on low terraces bordering flood plains. Harleston soils are loamy and moderately well drained. They are on low terraces bordering flood plains. The loamy, well drained Jena soils are on flood plains. The loamy Prentiss soils are on stream terraces, are moderately well drained, and have a dense and compact fragipan in the lower part of the subsoil. Quitman soils are loamy and moderately well drained. They are on low stream terraces bordering flood plains. This group makes up about 18.6 percent of the county.

8. Harleston-Cahaba

Loamy, moderately well drained and well drained, nearly level soils; on terraces

The soils in this map unit are mainly in the south-central part of Jones County. The soils are along the flood plain of Tallahala Creek. The flood plain is nearly level with little local relief. Many old channel scars border natural levees and poorly drained backswamp areas adjacent to the uplands. Tallahala Creek has a deep, narrow channel that winds through the area. The creek occasionally overflows. Most tributaries have deep channels. Most abandoned stream channels pond during wet seasons but are dry during the summer months. Slopes range from 0 to 2 percent.

This map unit makes up about 0.8 percent of the county. It is about 40 percent Harleston soils, 32 percent Cahaba soils, and 28 percent soils of minor extent.

Soils of minor extent are the well drained Jena soils and the poorly drained Trebloc soils. Jena soils are on flood plains in frequently flooded areas adjacent to the stream channel. Trebloc soils are on low stream terraces and flood plains.

Harleston soils are on low terraces bordering flood plains. These soils are loamy and moderately well drained. They formed in loamy sediment.

Cahaba soils are on low terraces bordering flood plains. These soils are loamy and well drained. They formed in loamy and sandy alluvial deposits.

Almost all of the soils of this map unit are used as woodland.

Harleston and Cahaba soils are well suited to row crops, small grains, truck crops, and grasses and legumes for hay and pasture.

The soils in this map unit are well suited to woodland.

The soils in this map unit have severe limitations for urban use. The hazard of flooding is the main limitation.

The soils in this map unit have good potential for use as habitat for openland and woodland wildlife. Potential for use as habitat for wetland wildlife is poor for Harleston soils and very poor for Cahaba soils.

9. Trebloc

Silty, poorly drained, nearly level soils; on terraces and flood plains

The soils in this map unit are mainly in the east-central and northeastern parts of Jones County. They are on broad flood plains of Tallahala and Bogue Homo Creeks. A few old channel scars are in this map unit. Stream channels are fairly narrow, shallow, and winding and have many fallen trees and other debris. Most of the old channels pond during wet seasons. Slopes range from 0 to 2 percent.

This map unit makes up about 4 percent of the county. It is about 60 percent Trebloc soils and 40 percent soils of minor extent.

Soils of minor extent are the moderately well drained Annemaine, Harleston, and Quitman soils. They are on low stream terraces bordering flood plains.

Trebloc soils are on low stream terraces and on flood plains. These soils are silty and poorly drained. They formed in moderately fine textured alluvial sediment.

The soils of this map unit are used mainly as woodland. A smaller acreage is in pasture.

Because of frequent flooding, Trebloc soils are poorly suited to row crops, small grains, and truck crops. They are moderately suited to grasses and legumes for hay and pasture.

The soils in this map unit are well suited to woodland.

The soils in this map unit have severe limitations for urban use. Wetness and the hazard of flooding are the main limitations.

The soils in this map unit have fair potential for the development of habitat for openland and woodland wildlife. They have good potential for development of habitat for wetland wildlife.

10. Bigbee-Cahaba-Jena

Sandy and loamy, excessively drained and well drained, nearly level to gently sloping soils; on terraces and flood plains

The soils in this map unit are mainly in the southwestern and western parts of Jones County. They are on the Leaf River flood plain. The area has many old channel scars and natural levees. The main stream channel is deep, relatively narrow, and winds through the area. The tributaries have deep, narrow channels. Many old, abandoned river channels pond year round. Slopes range from 0 to 5 percent.

This map unit makes up about 0.7 percent of the county. It is about 35 percent Bigbee soils, 20 percent Cahaba soils, 15 percent Jena soils, and 30 percent soils of minor extent.

Soils of minor extent are the moderately well drained Annemaine and Quitman soils on low stream terraces bordering flood plains, the moderately well drained Prentiss soils on stream terraces, and the somewhat poorly drained Stough soils on stream terraces.

Bigbee soils are on low terraces and flood plains. These soils are sandy and excessively drained. They formed in sandy alluvial sediment.

Cahaba soils are on low terraces bordering flood plains. These soils are loamy and well drained. They formed in loamy and sandy alluvial deposits.

Jena soils are on flood plains. They are loamy, well drained soils that formed in loamy alluvium.

The soils of this map unit are used mainly as woodland. A smaller acreage is in pasture or cropland.

Bigbee soils are moderately suited to row crops, small grains, truck crops, and grasses and legumes for hay and pasture. They tend to be droughty. Cahaba soils are well suited to cultivated crops and pasture plants. Because of frequent flooding, Jena soils are poorly suited to cultivated crops, but they are moderately suited to grasses and legumes for hay and pasture.

The soils in this map unit are well suited to woodland.

Because of flooding, the soils in this map unit are poorly suited to most urban uses.

Bigbee and Jena soils have fair potential for development of habitat for openland wildlife. Potential for use as habitat for woodland wildlife is poor for Bigbee soils and good for Jena soils. Cahaba soils have good potential for development of habitat for openland and woodland wildlife. Bigbee and Cahaba soils have very poor potential for use as habitat for wetland wildlife, and Jena soils have poor potential.

11. Jena-Prentiss-Bibb

Loamy and silty, well drained, moderately well drained, and poorly drained, nearly level to gently sloping soils; on flood plains and terraces

The soils in this map unit are mainly on flood plains and stream terraces along Big Creek in the northwestern part of the county, Oakey Woods Creek in the western part, and Rocky Creek in the central part. Many old

channel scars are along the flood plain. Channels are narrow and winding. The stream terraces are slightly higher than flood plains and are between the flood plains and uplands. Terraces are dissected by lateral streams. Slopes range from 0 to 5 percent.

This map unit makes up about 1.3 percent of the county. It is about 25 percent Jena soils, 23 percent Prentiss soils, 15 percent Bibb soils, and 37 percent soils of minor extent.

The soils of minor extent are the moderately well drained Annemaine soils on low stream terraces bordering flood plains, and the poorly drained Trebloc soils on flood plains and low stream terraces.

Jena soils are on flood plains. They are loamy, well drained soils that formed in loamy alluvium.

Prentiss soils are on stream terraces. They are loamy, moderately well drained soils that have a dense and compact fragipan. Prentiss soils formed in loamy sediment.

Bibb soils are on flood plains. They are silty, poorly drained soils that formed in stratified loamy and sandy alluvium.

The soils of this map unit are used mainly as pasture or cropland. A smaller acreage is used as woodland.

Because of frequent flooding, Jena and Bibb soils are poorly suited to row crops, small grains, and truck crops. They are moderately suited to grasses and legumes for hay and pasture. Prentiss soils are well suited to row crops, small grains, truck crops, and pasture plants.

The soils in this map unit are well suited to woodland.

Jena and Bibb soils have severe limitations for most urban uses. The hazard of flooding is the main limitation. Seasonal wetness of Prentiss soils is a moderate limitation for most urban uses. Wetness is a severe limitation for dwellings with basements.

Jena soils have fair potential for development of habitat for openland wildlife and good potential for development of woodland wildlife habitat. Prentiss soils have good potential for development of habitat for openland and woodland wildlife and poor potential for wetland wildlife. Bibb soils have fair potential for use as habitat for openland and woodland wildlife and good potential for use as habitat for wetland wildlife.

12. Trebloc-Quitman

Silty and loamy, poorly drained and moderately well drained, nearly level soils; on terraces and flood plains

The soils in this map unit are mainly on flood plains of the Leaf River in the southwestern part of the county; Tallahala Creek and tributaries in the north, central, and southern parts; and Bogue Homo Creek in the southeastern part. They are nearly level and have little local relief. Stream channels are deep, relatively narrow, and wind their way through the area. The higher stream terraces are broad areas that join the uplands. These terraces have many low, wet areas. Slopes range from 0 to 2 percent.

This map unit makes up about 11.8 percent of the county. It is about 45 percent Trebloc soils, 15 percent Quitman soils, and 40 percent soils of minor extent.

Soils of minor extent are the moderately well drained Annemaine soils on low stream terraces bordering flood plains, the excessively drained Bigbee soils on low terraces and flood plains, the well drained Jena soils on flood plains, and the somewhat poorly drained Stough soils on stream terraces.

Trebloc soils are on low stream terraces and on flood plains. These soils are silty and poorly drained. They formed in moderately fine textured alluvial sediment.

Quitman soils are on low terraces bordering flood plains. These soils are loamy and moderately well drained. They formed in loamy sediment.

The soils of this map unit are used mainly as woodland. A smaller acreage is used as pasture or cropland.

Trebloc soils are moderately suited to row crops, small grains, truck crops, and grasses and legumes for hay and pasture. The main limitation is wetness. Quitman soils are well suited to row crops, small grains, truck crops, and grasses and legumes for hay and pasture.

The soils in this map unit are well suited to woodland.

Because of flooding and wetness, the soils in this map unit have severe limitations for most urban uses.

Trebloc soils have fair potential for the development of habitat for openland and woodland wildlife and good potential for development of habitat for wetland wildlife. Quitman soils have good potential for development of habitat for openland and woodland wildlife and poor potential for wetland wildlife.

Detailed Soil Map Units

The map units on the detailed soil maps at the back of this survey represent the soils in the survey area. The map unit descriptions in this section, along with the soil maps, can be used to determine the suitability and potential of a soil for specific uses. They also can be used to plan the management needed for those uses. More information on each map unit, or soil, is given under "Use and Management of the Soils."

Each map unit on the detailed soil maps represents an area on the landscape and consists of one or more soils for which the unit is named.

A symbol identifying the soil precedes the map unit name in the soil descriptions. Each description includes general facts about the soil and gives the principal hazards and limitations to be considered in planning for specific uses.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer or of the underlying material, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer or of the underlying material. They also can differ in slope, stoniness, salinity, wetness, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Savannah loam, 0 to 2 percent slopes, is one of several phases in the Savannah series in Jones County.

Some map units are made up of two or more major soils. These map units are called soil complexes, soil associations, or undifferentiated groups.

A *soil complex* consists of two or more soils in such an intricate pattern or in such small areas that they cannot be shown separately on the soil maps. The pattern and proportion of the soils are somewhat similar in all areas. Heidel-Benndale complex, 8 to 20 percent slopes, is an example.

A *soil association* is made up of two or more geographically associated soils that are shown as one unit on the maps. Because of present or anticipated soil uses in the survey area, it was not considered practical or necessary to map the soils separately. The pattern and relative proportion of the soils are somewhat similar. Susquehanna-Petal association, rolling, is an example.

An *undifferentiated group* is made up of two or more soils that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils in a mapped area are not uniform. An area can be made up of only one of the major soils, or it can be made up of all of them. Trebloc silt loam and Bibb fine sandy loam, occasionally and frequently flooded, is an undifferentiated group in this survey area.

Most map units include small scattered areas of soils other than those for which the map unit is named. Some of these included soils have properties that differ substantially from those of the major soil or soils. Such differences could significantly affect use and management of the soils in the map unit. The included soils are identified in each map unit description. Some small areas of strongly contrasting soils are identified by a special symbol on the soil maps.

This survey includes *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Urban land is an example. Miscellaneous areas are shown on the soil maps. Some that are too small to be shown are identified by a special symbol on the soil maps.

Table 4 gives the acreage and proportionate extent of each map unit. Other tables (see "Summary of Tables") give properties of the soils and the limitations, capabilities, and potentials for many uses. The Glossary defines many of the terms used in describing the soils.

2—Jena fine sandy loam, frequently flooded. This nearly level, well drained soil formed in loamy alluvium on flood plains. It is subject to frequent flooding for brief periods during winter and spring. Slopes range from 0 to 2 percent.

The typical sequence, depth, and composition of the layers of this soil are as follows:

Surface layer:
surface to 5 inches, brown fine sandy loam
Subsoil:
5 to 9 inches, yellowish brown fine sandy loam
9 to 21 inches, light yellowish brown sandy loam
21 to 35 inches, yellowish brown loam
Substratum:

35 to 51 inches, light yellowish brown loamy fine sand
51 to 58 inches, yellowish brown loamy fine sand
58 to 62 inches, pale brown loamy fine sand

Important soil properties:

Permeability: moderate in the subsoil and moderately rapid in the substratum
Available water capacity: moderate
Soil reaction: very strongly acid or strongly acid throughout except where the surface layer has been limed
Surface runoff: slow
Erosion hazard: slight
Seasonal water table: more than 6 feet below the surface
Flooding: frequent for brief periods in winter and spring (fig. 1)
Root zone: deep and easily penetrated by plant roots
Tilth: not applicable

Included with this soil in mapping are small areas of Annemaine and Bigbee soils. Annemaine soils are on low stream terraces bordering flood plains, and Bigbee soils are on low terraces and flood plains near stream channels.

Most of the acreage of this Jena soil is used as woodland. A small acreage is in pasture.

This soil is poorly suited to row crops, small grains, and truck crops. The hazard of frequent flooding is the main limitation. This limitation can be overcome by a major flood control project and planned drainage system.

This soil is moderately suited to grasses and legumes for hay and pasture. Overgrazing or grazing when the soil is too wet can cause compaction and restricted infiltration. Proper stocking, pasture rotation, controlled grazing, weed and brush control, and restricted use during wet periods help maintain the pasture and soil in good condition.

This soil is well suited to loblolly pine, slash pine, sweetgum, water oak, southern red oak, and white oak. Seedling mortality is a concern, and it is a moderate

Figure 1.—An area of Jena fine sandy loam, frequently flooded, during a period of high water.

limitation. The hazard of flooding is a severe limitation for the use of equipment. This limited use of equipment can be partly overcome by harvesting in the dry periods.

This soil has fair potential for use as habitat for openland wildlife, good potential for woodland wildlife, and poor potential for wetland wildlife.

This soil has severe limitations for urban use and for septic tank absorption fields. Flooding is the main limitation.

This Jena soil is in capability subclass Vw and in woodland suitability group 1w9.

3—Mclaurin-Urban land complex. This map unit consists of well drained, undulating and rolling McLaurin soil and Urban land. Areas of this soil and Urban land were so intermingled that they could not be separated at the scale selected for mapping. The Urban land consists of built-up areas within the city of Laurel. Much of the area has been graded and filled to accommodate dwellings, schools, churches, cemeteries, small businesses, parking lots, and streets. McLaurin soil is on broad, convex upland ridges of higher elevation within the city. Slopes range from 2 to 8 percent. The mapped areas range from 80 to 250 acres.

McLaurin soil and similar soils make up about 60 percent of the map unit. They are areas of relatively undisturbed soils that can be classified.

The typical sequence, depth, and composition of the layers of McLaurin soil are as follows:

Surface layer:
surface to 5 inches, dark grayish brown loamy sand
Subsoil:
5 to 38 inches, yellowish red sandy loam
38 to 48 inches, yellowish red loamy sand that has light brown mottles
48 to 62 inches, red sandy loam

Important soil properties of McLaurin soils:

Permeability: moderate
Available water capacity: moderate
Soil reaction: very strongly acid or strongly acid throughout except where the surface layer has been limed
Surface runoff: medium or slow
Erosion hazard: moderate
Seasonal water table: more than 6 feet below the surface
Flooding: none
Root zone: deep and easily penetrated by plant roots
Tilth: good, the surface is friable and easily tilled throughout a fairly wide range of moisture content

Urban land makes up about 30 percent of this map unit. It is large areas of soils covered by buildings, streets, parking lots, and other structures that make it impractical to classify the soils.

Included with this complex in mapping are small areas of Heidel and Smithdale soils on short upland hillsides, Malbis and Ruston soils on narrow ridgetops and hillsides, and Savannah soils on flatter parts of upland ridgetops. The included soils make up about 10 percent of this map unit.

The McLaurin soil of this complex has good potential for use as habitat for woodland and openland wildlife and very poor potential for use as habitat for wetland wildlife. Urban land does not support vegetation.

McLaurin soil has slight limitations for most urban uses. Steepness of slope is a moderate limitation for small commercial buildings. This limitation can be partly overcome by special design and proper installation. Limitations for septic tank absorption fields are slight. Low strength is a moderate limitation for local roads and streets.

The soils of this complex are not assigned a capability subclass or a woodland suitability group.

4—Malbis-Urban land complex. This map unit consists of moderately well drained, undulating to rolling Malbis soil and Urban land. Malbis soil and Urban land were so intermingled that they could not be separated at the scale selected for mapping. Malbis soil formed in loamy marine sediments. The Urban land consists of built-up areas within the city of Laurel. Much of the area has been graded and filled to accommodate dwellings, schools, churches, cemeteries, small businesses, parking lots, streets, and highways. Malbis soil is on uplands throughout the city. Slopes range from 2 to 8 percent. The mapped areas range from 60 to 800 acres.

Malbis soil and similar soils make up about 60 percent of the map unit. They are areas of relatively undisturbed soils that can be classified.

The typical sequence, depth, and composition of the layers of Malbis soil are as follows:

Surface layer:
surface to 7 inches, dark grayish brown fine sandy loam
Subsurface layer:
7 to 14 inches, brown fine sandy loam
Subsoil:
14 to 26 inches, strong brown loam
26 to 47 inches, yellowish brown loam that has brown and red mottles and few nodules of plinthite
47 to 65 inches, yellowish brown loam that has red mottles and nodules of plinthite

Important soil properties of Malbis soil:

Permeability: moderate in the upper part of the subsoil and moderately slow in the lower part
Available water capacity: moderate

Soil reaction: very strongly acid or strongly acid throughout except where the surface layer has been limed
Surface runoff: medium or slow
Erosion hazard: moderate
Seasonal water table: perched 2.5 to 4.0 feet below the surface in winter and early in spring
Flooding: none
Root zone: deep and easily penetrated by plant roots
Tilth: good, the surface layer is friable and easily tilled throughout a wide range of moisture content

Urban land makes up about 30 percent of this map unit. It is areas of soils covered by buildings, streets, parking lots, and other structures that make it impractical to classify the soils.

Included with this complex in mapping are small areas of Savannah soils on broad upland ridges and Susquehanna soils on sloping uplands. The included soils make up about 10 percent of this map unit.

The Malbis soil of this complex has good potential for use as habitat for openland and woodland wildlife and very poor potential for use as habitat for wetland wildlife. Urban land does not support vegetation.

Malbis soil has moderate limitations for most urban uses. Wetness, steepness of slope, and low strength as it affects local roads and streets are limitations. These limitations can be partly overcome by special design and proper installation. Slow permeability is a severe limitation to septic tank absorption fields. Alternate systems or larger absorption fields help to overcome these limitations.

The soils of this complex are not assigned a capability subclass or a woodland suitability group.

5—Urban land. Most of this map unit is in Pine Belt Regional Airport and parts of the cities of Laurel and Ellisville. About 80 to 95 percent of the surface area is covered by industrial, commercial, or residential development, such as railroad yards, airport landing strips, buildings, streets, and parking lots. This land does not support vegetation. Plants can grow only in the remaining areas where soils are not covered by buildings and pavement. Cuts and fills for installing improvements and structures have altered the original soils. Most of the original soils were well drained and moderately well drained.

Urban land is not assigned a capability subclass or a woodland suitability group.

6—Bibb silt loam, frequently flooded. This nearly level, poorly drained soil formed in stratified loamy and sandy alluvium on narrow flood plains. It is subject to frequent flooding during winter and spring. Flooding is generally for brief periods. Slopes range from 0 to 2 percent.

The typical sequence, depth, and composition of the layers of this soil are as follows:

Surface layer:
surface to 6 inches, grayish brown silt loam
Underlying material:
6 to 17 inches, light brownish gray fine sandy loam that has light yellowish brown and strong brown mottles
17 to 26 inches, light gray fine sandy loam that has brownish yellow and strong brown mottles
26 to 60 inches, light gray loamy sand that has light yellowish brown mottles and fine stratifications

Important soil properties:

Permeability: moderate
Available water capacity: moderate
Soil reaction: very strongly acid or strongly acid throughout except where the surface layer has been limed
Surface runoff: slow
Erosion hazard: slight
Seasonal water table: 0.5 foot to 1.5 feet below the surface in winter and spring
Flooding: frequent for brief periods in winter and spring
Root zone: seasonal water table in spring limits root growth of plants not tolerant of water
Tilth: not applicable

Included with this soil in mapping are small areas of Quitman soils on low terraces bordering flood plains, Stough soils on stream terraces, and Trebloc soils on stream terraces and flood plains. Also included are small areas of soils that are flooded for long duration, small areas of soils in sloughs and old channels that are ponded except during prolonged droughts, and a few areas of very poorly drained organic soils in depressions.

Most of the acreage of this Bibb soil is used as woodland (fig. 2). Some areas that are less subject to flooding are used for pasture and hay, and a small acreage is used for crops.

This soil is poorly suited to row crops, small grains, and truck crops. Wetness and the hazard of frequent flooding are the main limitations. These limitations can be overcome only by a major flood control project and planned drainage system.

This soil is moderately suited to some summer annual grasses and legumes for hay and pasture. Wetness limits the choice of pasture plants and the period of cutting or grazing and decreases plant survival. Overgrazing or grazing when the soil is too wet can cause compaction and restricted infiltration. Proper stocking, controlled grazing, and weed and brush control help keep the pasture and soil in good condition.

This soil is well suited to loblolly pine, sweetgum, blackgum, and water oak. Seasonal wetness and the hazard of flooding are severe limitations in management, but they can be partly overcome by harvesting during the drier periods. If pine trees are planted, site preparation is

Figure 2.—Woodland in an area of Bibb silt loam, frequently flooded.

required to control competition from undesirable plants. Benefits of site preparation do not extend beyond one growing season. Seedling mortality is a severe limitation.

This soil has fair potential for use as habitat for openland and woodland wildlife. It has good potential for use as habitat for wetland wildlife.

This soil has severe limitations for urban use and septic tank absorption fields. Seasonal wetness and the hazard of flooding are the main limitations.

This Bibb soil is in capability subclass Vw and in woodland suitability group 2w9.

7—Savannah-Urban land complex. This map unit consists of moderately well drained, nearly level and gently undulating Savannah soil and Urban land. Areas of this soil and Urban land were so intermingled that it was not practical to separate them at the scale selected for mapping. The Urban land is in the city of Laurel. Savannah soil is mainly on broad, fluvial terraces along Tallahala and Tallahoma Creeks. Slopes range from 0 to 5 percent. The mapped areas range from 80 to 300 acres.

Savannah soil makes up about 60 percent of the map unit. Areas of this soil consist of lawns, gardens, playgrounds, vacant lots, and small wooded tracts that are mingled through the urban development.

The typical sequence, depth, and composition of the layers of Savannah soil are as follows:

Surface layer:
surface to 7 inches, dark grayish brown loam
Subsurface layer:
7 to 11 inches, yellowish brown loam
Subsoil:
11 to 23 inches, strong brown loam
23 to 60 inches, a fragipan that is sandy loam in the upper part and loam in the lower part and is

mottled throughout in shades of yellow, brown, and gray.

Important soil properties of Savannah soil:

Permeability: moderate in the surface layer and upper part of the subsoil and moderately slow in the fragipan
Available water capacity: moderate
Soil reaction: very strongly acid or strongly acid throughout except where the surface layer has been limed
Surface runoff: slow or medium
Erosion hazard: slight to moderate
Seasonal water table: perched above the fragipan about 1.5 to 3.0 feet below the surface late in winter and early in spring
Flooding: none
Root zone: root penetration is restricted by the compact and brittle fragipan in the lower part of the subsoil
Tilth: good, the surface layer is friable and can be worked throughout a wide range of moisture content

Urban land makes up about 40 percent of this map unit. It is undisturbed soils and altered or reworked soil material that is covered by houses, streets, industrial sites, commercial buildings, and parking lots. Because the soils are covered, the rate of runoff is high.

Included with this complex in mapping are small areas of Trebloc soils in depressions and Bibb soils in drainageways. Also included are small areas of soils that have slopes of more than 5 percent and small areas of poorly drained alluvial soils in drainageways. The included soils make up about 15 percent of the map unit.

Savannah soil is well suited to lawn grasses, shrubs, and ornamental trees. It is moderately suited to native trees, including loblolly pine, shortleaf pine, white oak, southern red oak, cherrybark oak, eastern redcedar, pecan, and sweetgum. This soil is well suited to vegetable gardens.

Savannah soil has good potential for use as habitat for openland and woodland wildlife and very poor potential for use as habitat for wetland wildlife. Urban land does not support vegetation.

Savannah soil has moderate limitations for most urban uses. Wetness is the main limitation, and it is a severe limitation for dwellings with basements. These limitations can be partly overcome by special design and proper installation. The moderately slow permeability of the fragipan is a severe limitation for septic tank absorption fields. This can be partly overcome by lengthening the field lines.

This Savannah soil and Urban land are not assigned a capability subclass or a woodland suitability group.

11E—Heidel-Benndale complex, 8 to 20 percent slopes. This map unit consists of well drained Heidel and Benndale soils. Areas of these soils were so intermingled that they could not be separated at the scale selected for mapping. Heidel soil is on strongly sloping to steep hillsides. It formed in loamy marine sediment. Slopes range from 8 to 20 percent. Benndale soil is on strongly sloping upland ridgetops and upper parts of hillsides. It formed in loamy marine deposits. Slopes range from 8 to 12 percent.

Heidel soil and closely similar soils make up about 45 percent of the complex.

The typical sequence, depth, and composition of the layers of the Heidel soil are as follows:

Surface layer:
surface to 2 inches, dark grayish brown fine sandy loam
Subsurface layer:
2 to 14 inches, yellowish brown fine sandy loam
Subsoil:
14 to 60 inches, yellowish red loam that has pockets of light yellowish brown sand grains below a depth of 29 inches

Important soil properties of Heidel soil:

Permeability: moderate
Available water capacity: moderate
Soil reaction: very strongly acid or strongly acid throughout except where the surface layer has been limed
Surface runoff: rapid
Erosion hazard: severe
Seasonal water table: more than 6 feet below the surface
Flooding: none
Root zone: deep and easily penetrated by plant roots
Tilth: not applicable

Benndale soil and closely similar soils make up about 35 percent of the complex.

The typical sequence, depth, and composition of the layers of the Benndale soil are as follows:

Surface layer:
surface to 3 inches, dark grayish brown fine sandy loam
Subsurface layer:
3 to 11 inches, light yellowish brown loamy sand
Subsoil:
11 to 26 inches, strong brown sandy loam
26 to 53 inches, yellowish brown sandy loam that has a few nodules of plinthite
53 to 60 inches or more, yellowish brown fine sandy loam that has mottles of light brownish gray, pockets of uncoated sand grains, and few nodules of plinthite

Important soil properties of Benndale soil:

Permeability: moderate
Available water capacity: moderate
Soil reaction: very strongly acid or strongly acid throughout except where the surface layer has been limed
Surface runoff: rapid
Erosion hazard: severe
Seasonal water table: more than 6 feet below the surface
Flooding: none
Root zone: deep and easily penetrated by plant roots
Tilth: not applicable

Included with this complex in mapping are small areas of McLaurin and Smithdale soils on upland hillsides, Trebloc soils on low stream terraces and flood plains, and small areas of organic soils in low depressions on flood plains. The included soils make up about 20 percent of the map unit.

Most of the acreage in this complex is used as woodland.

Because of steepness of slope, rapid runoff, and the severe erosion hazard, the soils in this map unit are poorly suited to row crops, small grain, and truck crops. Permanent vegetation of grasses and legumes or trees should be maintained on these soils to control erosion.

Heidel and Benndale soils are moderately suited to grasses and legumes for hay and pasture. Overgrazing increases runoff and the hazard of erosion. Proper stocking, pasture rotation, restricted use during wet periods, and weed and brush control help to maintain the pasture and soil in good condition.

Heidel soil is well suited to loblolly pine, shortleaf pine, and slash pine. Limitations for woodland management are slight. Benndale soil is well suited to loblolly pine, longleaf pine, and slash pine. Limitations for woodland management are slight except for moderate plant competition. If pine trees are planted on Benndale soil, site preparation is needed to control competition from undesirable plants. Benefits of site preparation do not extend beyond one growing season.

Heidel soil has fair potential for use as habitat for openland wildlife, and Benndale soil has good potential. Both soils have good potential for use as habitat for woodland wildlife and very poor potential for wetland wildlife.

Heidel soil has severe limitations for urban use. Steepness of slope is the main limitation. Benndale soil has moderate limitations for urban use. Steepness of slope of Benndale soil is a severe limitation for small commercial buildings. This limitation can be partly overcome by special design and proper installation. Because of steepness of slope, Heidel soil has severe limitations for septic tank absorption fields, and Benndale soil has moderate limitations for this use. These limitations can be partly overcome by special design and proper installation and by installing field lines on the contour.

Heidel soil is in capability subclass VIIe, and Benndale soil is in capability subclass IVe. These soils are in woodland suitability group 2o1.

15—Quitman fine sandy loam. This nearly level, moderately well drained soil formed in loamy sediment on low terraces bordering flood plains. Slopes range from 0 to 2 percent.

The typical sequence, depth, and composition of the layers of this soil are as follows:

Surface layer:
surface to 4 inches, dark gray fine sandy loam
Subsurface layer:
4 to 8 inches, light olive brown fine sandy loam
Subsoil:
8 to 19 inches, yellowish brown loam that has yellowish brown and light brownish gray mottles
19 to 30 inches, mottled yellowish brown, strong brown, and light brownish gray loam
30 to 44 inches, mottled light brownish gray, strong brown, and yellowish brown loam
44 to 60 inches, light brownish gray sandy clay loam that has yellowish brown and yellowish red mottles

Important soil properties:

Permeability: moderate in the surface layer and upper part of the subsoil and moderately slow in the lower part
Available water capacity: moderate
Soil reaction: very strongly acid or strongly acid throughout except where the surface layer has been limed
Surface runoff: slow
Erosion hazard: slight
Seasonal water table: perched 1.5 to 2.0 feet below the surface during winter and early in spring
Flooding: none
Root zone: root penetration is somewhat limited by the seasonal water table
Tilth: good, but the soil can be worked more easily during drier periods

Included with this soil in mapping are small areas of Bibb soils on flood plains, Harleston soils on low terraces bordering flood plains, and Trebloc soils on low stream terraces, upland flats, and flood plains.

Most of the acreage of this Quitman soil is used as woodland or pasture. A small acreage is in cropland.

This soil is well suited to row crops, small grains, and truck crops. Seasonal wetness is the main limitation. Adequate cropping systems, conservation tillage, aligning crop rows to remove excess surface water, and surface

field ditches are needed when crops are grown. Returning crop residue to the soil improves tilth. Preparing the seedbed and cultivating in spring are sometimes delayed because of wetness.

This soil is well suited to grasses and legumes for hay and pasture. Overgrazing or grazing when the soil is too wet causes compaction and restricted infiltration. Proper stocking, pasture rotation, restricted use during wet periods, and weed and brush control help to maintain the pasture and soil in good condition.

This soil is well suited to loblolly pine, water oak, sweetgum, American sycamore, yellow-poplar, and slash pine. Seasonal wetness is a moderate limitation to use of equipment, but this can be partly overcome by harvesting during the drier periods. If pines are planted, site preparation is useful to control competition from undesirable plants. Benefits of site preparation do not extend beyond one growing season.

This soil has good potential for use as habitat for openland and woodland wildlife. It has poor potential for use as habitat for wetland wildlife.

This soil has moderate limitations for urban use. Seasonal wetness is the main limitation. Wetness and low strength are moderate limitations for local roads and streets. Wetness is a severe limitation for dwellings with basements. These limitations can be partly overcome by special design and proper installation. The moderately slow permeability is a severe limitation for septic tank absorption fields. This can be partly overcome by increasing the field size.

This Quitman soil is in capability subclass IIw and in woodland suitability group 2w8.

16—Bigbee loamy sand, occasionally flooded. This nearly level, excessively drained soil formed in sandy alluvium on low terraces and flood plains. It is subject to occasional flooding for brief periods during winter and early in spring before crops are planted. Slopes range from 0 to 5 percent.

The typical sequence, depth, and composition of the layers of this soil are as follows:

Surface layer:
surface to 9 inches, brown loamy sand
Underlying material:
9 to 38 inches, strong brown loamy sand
38 to 65 inches or more, very pale brown sand

Important soil properties:

Permeability: rapid
Available water capacity: low
Soil reaction: very strongly acid or strongly acid throughout except where the surface layer has been limed
Surface runoff: slow
Erosion hazard: slight
Seasonal water table: 3.5 to 6.0 feet below the surface late in winter and early in spring
Flooding: occasional flooding for brief periods in winter and early in spring before crops are planted
Root zone: deep and easily penetrated by plant roots
Tilth: fair, can be worked over a fairly wide range of moisture content

Included with this soil in mapping are small areas of Cahaba soils on low terraces bordering flood plains, Jena soils on flood plains close to the stream, and Prentiss soils on stream terraces.

Most of the acreage of this Bigbee soil is used for row crops or pasture. A small acreage is in woodland.

This soil is moderately suited to row crops, small grains, and truck crops. Droughtiness of the sandy lower part of the soil and flooding are the main concerns in management. Crop residue left on or near the surface helps to conserve moisture. Conservation tillage and row arrangement are recommended. This soil has high potential for leaching lime and fertilizer, and frequent applications are needed to sustain satisfactory yields.

This soil is moderately suited to grasses and legumes for hay and pasture. Regular fertilizing and liming are needed. Proper stocking, controlled grazing, pasture rotation, weed and brush control, and restricting use during wet periods help maintain the pasture and soil in good condition.

This soil is well suited to loblolly pine (fig. 3). Seedling mortality is a concern in management, and it is a moderate limitation for woodland use. The sandy soil surface and hazard of flooding are moderate limitations for the use of equipment. The limitations caused by flooding can be partly overcome by logging in drier periods.

This soil has fair potential for use as habitat for openland wildlife, and poor potential for woodland wildlife. It has very poor potential for use as habitat for wetland wildlife.

Because of flooding, this soil has severe limitations for urban use and septic tank absorption fields.

This Bigbee soil is in capability subclass IIIs and in woodland suitability group 2s2.

17—Trebloc-Quitman association, occasionally flooded. This map unit consists of nearly level, poorly drained Trebloc soil and moderately well drained Quitman soil in a regular and repeating pattern. The composition varies somewhat between mapped areas, but mapping has been controlled well enough for the expected use of the soils. Trebloc soil formed in moderately fine textured alluvium, and is in depressions and slack water areas. Quitman soil formed in loamy alluvium, and is in slightly higher areas on flood plains and stream terraces. These soils are subject to occasional flooding for brief periods in winter and early in

Figure 3.—A clearcut area of Bigbee loamy sand, occasionally flooded, ready for replanting.

spring. Slopes range from 0 to 2 percent. The mapped areas range from 200 to 1,500 acres.

Trebloc soil and closely similar soils make up about 31 percent of the association.

The typical sequence, depth, and composition of the layers of Trebloc soil are as follows:

Surface layer:
surface to 5 inches, very dark grayish brown silt loam
Subsurface layer:
5 to 12 inches, grayish brown silt loam
Subsoil:
12 to 18 inches, gray silt loam that has yellowish brown mottles
18 to 60 inches, gray silty clay loam that has brownish yellow mottles

Important soil properties of Trebloc soil:

Permeability: moderately slow
Available water capacity: high
Soil reaction: very strongly acid or strongly acid throughout except where the surface layer has been limed
Surface runoff: slow
Erosion hazard: slight
Seasonal water table: within 0.5 to 1.0 foot below the surface late in winter and early in spring
Flooding: occasional, for brief periods mainly during winter and early in spring
Root zone: penetration of roots of plants that are not water tolerant is somewhat limited by the seasonal water table
Tilth: good, but these soils can be worked more easily during the drier periods

Quitman soil and closely similar soils make up about 29 percent of the association.

The typical sequence, depth, and composition of the layers of the Quitman soil are as follows:

Surface layer:
surface to 3 inches, very dark grayish brown fine sandy loam
Subsurface layer:
3 to 10 inches, light yellowish brown fine sandy loam
Subsoil:
10 to 20 inches, light yellowish brown loam that has gray and brownish yellow mottles
20 to 35 inches, mottled light yellowish brown, brownish yellow, and light gray loam
35 to 60 inches, mottled light brownish gray, yellowish red, and red clay loam

Important soil properties of Quitman soil:

Permeability: moderate in the upper part of the subsoil and moderately slow in the lower part
Available water capacity: moderate
Soil reaction: very strongly acid or strongly acid throughout except where the surface layer has been limed
Surface runoff: slow
Erosion hazard: slight
Seasonal water table: from 1.5 to 2.0 feet below the surface late in winter and early in spring
Flooding: occasional, for brief periods mainly during winter and early in spring
Root zone: penetration of roots is somewhat limited by the seasonal water table
Tilth: good, but these soils can be worked more easily during the drier periods

Included with this association in mapping are small areas of Bibb soils on narrow flood plains, Cahaba soils on low terraces bordering flood plains, and Jena soils on flood plains near the stream. Also included are small areas of soils in similar positions as Trebloc and Quitman soils that are browner and better drained than these soils. The included soils make up about 40 percent of the map unit.

Most of the acreage of the Trebloc and Quitman soils is used as woodland.

Trebloc soil is moderately suited to row crops, small grains, and truck crops, and Quitman soil is well suited to these uses. Seasonal wetness and the hazard of flooding are the main limitations. Adequate cropping systems and aligning crop rows and surface field ditches to remove excess surface water are needed when crops are grown. Returning crop residue to the soil improves tilth.

Trebloc soil is moderately suited to grasses and legumes for hay and pasture, and Quitman soil is well suited to this use. Overgrazing or grazing when the soil is too wet causes compaction and restricted infiltration. Proper stocking, controlled grazing, and weed and brush control help keep the pasture and soil in good condition.

Trebloc soil is well suited to loblolly pine, green ash, Nuttall oak, Shumard oak, water oak, and sweetgum. It has severe limitations for the operation of equipment, and seedling mortality is a severe limitation. Surface drainage and good seedbed preparation decreases seedling mortality. Quitman soil is well suited to loblolly pine, slash pine, water oak, and sweetgum. It has moderate limitations for the operation of equipment for management and harvesting. Scheduling of harvesting and management operations during drier periods helps overcome this limitation on both soils.

Trebloc soil has fair potential for use as habitat for openland and woodland wildlife and good potential for wetland wildlife. Quitman soil has good potential for use as habitat for openland and woodland wildlife and poor potential for use as habitat for wetland wildlife.

Trebloc and Quitman soils have severe limitations for most community development. Wetness and the hazard of flooding are the main limitations. Because of low strength, Trebloc soil also has severe limitations for local roads and streets. Wetness and the hazard of flooding are severe limitations of Trebloc and Quitman soils for septic tank absorption fields.

Trebloc soil is in capability subclass IIIw, and Quitman soil is in subclass IIw. Trebloc soil is in woodland suitability group 2w9, and Quitman soil is in woodland group 2w8.

19—Harleston-Cahaba association, occasionally flooded. This map unit consists of nearly level, moderately well drained Harleston soil and nearly level, well drained Cahaba soil in a regular and repeating pattern. The composition varies somewhat between mapped areas, but mapping has been controlled well enough for the expected use of the soils. Harleston and Cahaba soils are on low stream terraces bordering flood plains, mainly along Tallahala Creek south of Ellisville where the channel is deeply entrenched. Harleston soil formed in loamy sediment; Cahaba soil formed in loamy and sandy alluvium. Harleston soil is in broad areas between old, abandoned channels and the entrenched stream channels. Cahaba soil is mainly in slightly higher areas and on natural levees that border the abandoned channels and the present stream channel. It is also above short scarps that border frequently flooded sloughs and overflow runs. These soils are occasionally flooded for brief periods during winter and early in spring before crops are planted. Slopes range from 0 to 2 percent. The mapped areas range from 160 to 500 acres.

Harleston soil and closely similar soils make up about 45 percent of the association.

The typical sequence, depth, and composition of the layers of Harleston soil are as follows:

Surface layer:
surface to 6 inches, dark grayish brown fine sandy loam
Subsoil layer:
6 to 23 inches, yellowish brown sandy loam
23 to 34 inches, yellowish brown loam that has light brownish gray and strong brown mottles
34 to 62 inches, mottled light brownish gray and reddish brown sandy clay loam

Important soil properties of Harleston soil:

Soil reaction: very strongly acid or strongly acid throughout except where the surface layer has been limed
Permeability: moderate
Available water capacity: moderate
Surface runoff: slow
Erosion hazard: slight
Seasonal water table: 2 to 3 feet below the surface late in winter and early in spring
Flooding: occasional, for brief periods in winter and early in spring before crops are planted
Root zone: deep and easily penetrated by plant roots
Tilth: good, can be worked throughout a wide range of moisture content

The Cahaba soil and similar soils make up about 32 percent of the map unit.

The typical sequence, depth, and composition of the layers of Cahaba soil are as follows:

Surface layer:
surface to 3 inches, dark grayish brown loamy sand
Subsurface layer:
3 to 12 inches, brown loamy sand
Subsoil:
12 to 41 inches, yellowish red sandy clay loam
Substratum:
41 to 53 inches, yellowish brown sandy loam
53 to 65 inches, yellowish brown loamy sand

Important soil properties of Cahaba soil:

Soil reaction: very strongly acid or strongly acid throughout except where the surface layer has been limed
Permeability: moderate
Available water capacity: moderate
Surface runoff: slow
Erosion hazard: slight
Seasonal water table: more than 6 feet below the surface
Flooding: occasional, for brief periods in winter and early in spring before crops are planted
Root zone: deep and easily penetrated by plant roots
Tilth: good, can be worked throughout a wide range of moisture content

Included with these soils in mapping are small areas of Bigbee soils on low terraces and flood plains, Jena soils on flood plains, Quitman soils on low terraces bordering flood plains, and Trebloc soils on stream terraces and flood plains. The included soils make up about 23 percent of the map unit.

Most of the acreage of Harleston and Cahaba soils is used as woodland.

The soils in this map unit are well suited to row crops, small grains, and truck crops. Occasional flooding and the seasonal high water table in the Harleston soil are the main limitations. Adequate cropping systems, conservation tillage, aligning crop rows to remove excess surface water, and surface field ditches are needed when crops are grown. Returning crop residue to the soil improves tilth.

The Harleston and Cahaba soils are well suited to grasses and legumes for hay and pasture. Overgrazing or grazing when the soil is too wet causes compaction and restricted infiltration. Proper stocking, controlled grazing, and weed and brush control help keep the soil and pasture in good condition.

Harleston soil is well suited to loblolly pine, sweetgum, and slash pine. Seasonal wetness and flooding are moderate limitations for use of equipment. Scheduling harvesting and management operations in drier periods helps overcome these limitations. Cahaba soil is well suited to longleaf pine, southern red oak, white oak, cherrybark oak, blackgum, and American sycamore. Seedling mortality and plant competition are moderate limitations for woodland management. If pines are planted, site preparation is required to control competition from undesirable plants. Benefits of site preparation do not extend beyond one growing season.

The soils in this map unit have good potential for use as habitat for openland and woodland wildlife. Harleston soil has poor potential and Cahaba soil has very poor potential for use as habitat for wetland wildlife.

Harleston and Cahaba soils have severe limitations for most community development and for septic tank absorption fields. The hazard of flooding is the main limitation.

Harleston and Cahaba soils are in capability subclass IIw. Harleston soil is in woodland suitability group 2w8, and Cahaba soil is in woodland group 2s7.

20A—Cahaba sandy loam, occasionally flooded. This nearly level, well drained soil formed in loamy and sandy alluvial deposits on low terraces bordering flood plains. It is subject to occasional flooding for brief periods late in winter and early in spring before crops are planted. Slopes range from 0 to 2 percent.

The typical sequence, depth, and composition of the layers of this soil are as follows:

Surface layer:
surface to 6 inches, dark grayish brown sandy loam

Subsoil:
6 to 21 inches, red sandy clay loam
21 to 33 inches, yellowish red sandy loam
Substratum:
33 to 42 inches, strong brown loamy sand
42 to 65 inches or more, very pale brown coarse sand

Important soil properties:

Permeability: moderate
Available water capacity: moderate
Soil reaction: very strongly acid or strongly acid throughout except where the surface layer has been limed
Surface runoff: slow
Erosion hazard: slight
Seasonal water table: more than 6 feet below the surface
Flooding: occasional, for brief periods late in winter and early in spring before crops are planted
Root zone: deep and easily penetrated by plant roots
Tilth: good, can be worked throughout a wide range of moisture content

Included with this soil in mapping are small areas of Annemaine soils on low stream terraces bordering flood plains, Bigbee soils on low terraces and flood plains, and Prentiss soils on stream terraces.

Most of the acreage of this Cahaba soil is used for row crops and pasture. The remainder is in woodland.

This soil is well suited to row crops, truck crops, and small grains. The hazard of flooding is the main limitation. An adequate cropping system, conservation tillage, crop rotation, and returning crop residue to the soil are recommended when crops are grown. Aligning crop rows and surface field ditches is recommended to remove surface water.

This soil is well suited to grasses and legumes for hay and pasture. Overgrazing or grazing when the soil is too wet, however, causes compaction and restricted infiltration. Proper stocking, controlled grazing, and weed and brush control help keep the soil and pasture in good condition.

This soil is well suited to loblolly pine, slash pine, yellow-poplar, sweetgum, and cherrybark oak. Limitations for woodland management are slight. If pine trees are planted, site preparation is needed to control competition from undesirable plants. Benefits of site preparation do not extend beyond one growing season.

This soil has good potential for use as habitat for openland and woodland wildlife. It has very poor potential for use as habitat for wetland wildlife.

The limitations for most urban uses and for septic tank absorption fields are severe on this soil. The hazard of flooding is the main limitation.

This Cahaba soil is in capability subclass IIw and in woodland suitability group 2o7.

22—Annemaine silt loam, occasionally flooded. This nearly level, moderately well drained soil formed in clayey and loamy alluvium on low terraces bordering flood plains. This soil is subject to occasional flooding mostly for brief periods during winter and early in spring before crops are planted. Slopes range from 0 to 2 percent.

The typical sequence, depth, and composition of the layers of this soil are as follows:

Surface layer:
surface to 6 inches, very dark grayish brown silt loam
Subsoil:
6 to 25 inches, yellowish red silty clay that has light brownish gray mottles below a depth of 14 inches
25 to 43 inches, mottled yellowish red, light gray, and light yellowish brown silty clay
43 to 60 inches, mottled strong brown, dark red, and light gray loam

Important soil properties:

Permeability: slow
Available water capacity: high
Soil reaction: very strongly acid or strongly acid throughout except where the surface layer has been limed
Surface runoff: slow
Erosion hazard: slight
Seasonal water table: 1.5 to 2.5 feet below the surface late in winter and early in spring
Flooding: occasional, mostly for brief durations in winter and early in spring before crops are planted
Root zone: root growth is somewhat limited by the firm, clayey subsoil and the seasonal water table
Tilth: fair, this soil is friable and can be worked throughout a fairly wide range of moisture content, and it is cloddy if plowed when wet

Included with this soil in mapping are small areas of Cahaba soil in slightly higher positions than Annemaine soil on low terraces bordering flood plains, small areas of Jena soils adjacent to streams, and Stough soils in similar positions as Annemaine soil on stream terraces. Also included are some small, low areas of soils that can flood for several days.

Most of the acreage of this Annemaine soil is used as woodland. A small acreage is in pasture and row crops.

This soil is well suited to row crops, small grains, and truck crops. Seasonal wetness and the hazard of flooding are the main limitations. Adequate cropping systems and aligning crop rows and surface field ditches to remove excess surface water are needed when crops are grown.

This soil is well suited to grasses and legumes for hay and pasture. Overgrazing or grazing when the soil is too

wet, however, causes compaction and restricted infiltration. Proper stocking, pasture rotation, restricted use during wet periods, and weed and brush control help to maintain the pasture and soil in good condition.

This soil is moderately suited to loblolly pine, shortleaf pine, slash pine, sweetgum, American sycamore, and yellow-poplar. Seasonal wetness and the hazard of flooding are moderate limitations, but they can be partly overcome by harvesting during the drier periods (fig. 4). If pines are planted, site preparation is needed to control competition from undesirable plants. Benefits of site preparation do not extend beyond one growing season.

This soil has good potential for use as habitat for openland and woodland wildlife. It has poor potential for use as habitat for wetland wildlife.

This soil has severe limitations for urban use and for septic tank absorption fields. Seasonal wetness and the hazard of flooding are the main limitations. Low strength and the hazard of flooding are severe limitations for local roads and streets.

This Annemaine soil is in capability subclass IIw and in woodland suitability group 3w8.

24A—Prentiss loam, 0 to 2 percent slopes. This nearly level, moderately well drained soil has a fragipan. It formed in loamy sediment on stream terraces.

The typical sequence, depth, and composition of the layers of this soil are as follows:

Surface layer:

surface to 7 inches, dark grayish brown loam

Subsoil:

7 to 26 inches, yellowish brown loam

26 to 64 inches or more, a fragipan that is light yellowish brown loam mottled in shades of brown and gray

Figure 4.—Clearcut area of Annemaine silt loam, occasionally flooded. This soil has a moderate limitation for use of heavy equipment during wet periods, and competition of unwanted vegetation must be controlled.

Important soil properties:

Permeability: moderate in the surface layer and upper part of the subsoil and moderately slow in the fragipan
Available water capacity: moderate
Soil reaction: very strongly acid or strongly acid throughout except where the surface layer has been limed
Surface runoff: slow
Erosion hazard: slight
Seasonal water table: perched above the fragipan 2.0 to 2.5 feet below the surface in winter and early in spring in wet periods.
Flooding: none
Root zone: the compact and brittle fragipan restricts root penetration in the lower part of the subsoil
Tilth: good, can be tilled throughout a relatively wide range of moisture content

Included with this soil in mapping are small areas of Bigbee soils on low terraces and flood plains, Cahaba soils on low terraces bordering flood plains, Stough soils on stream terraces, and Trebloc soils on upland flats, low stream terraces, and flood plains.

Most areas of this Prentiss soil are used as pasture and woodland. A small acreage is in cropland.

This soil is well suited to row crops, small grains, and truck crops. Seasonal wetness is the main limitation. Plant row arrangement, grassed waterways, and surface field ditches are needed to remove excess surface water. In some years, seedbed preparation and tillage are delayed because of wetness. Conservation tillage and the return of crop residue to the soil improve soil fertility and tilth and reduce crusting and packing.

This soil is well suited to grasses and legumes for hay and pasture. Overgrazing or grazing when the soil is too wet causes compaction and restricted infiltration. Proper stocking, pasture rotation, restricted use during wet periods, and weed and brush control help keep the pasture and soil in good condition.

This soil is well suited to loblolly pine, shortleaf pine, sweetgum, cherrybark oak, white oak, and slash pine. Limitations for woodland management are slight. If pines are planted, site preparation is useful to control competition from undesirable plants. Benefits of site preparation do not extend beyond one growing season.

This soil has good potential for use as habitat for openland and woodland wildlife. It has fair potential for use as habitat for wetland wildlife.

This soil has moderate limitations for most urban uses. Wetness is a severe limitation for dwellings with basements. Special design and proper installation can partly overcome this limitation. The moderately slow permeability rate in the fragipan and seasonal wetness are severe limitations for septic tank absorption fields, but the effects of these limitations can be partly overcome by increasing the size of the absorption field.

This Prentiss soil is in capability subclass IIw and in woodland suitability group 2o7.

24B—Prentiss loam, 2 to 5 percent slopes. This gently sloping, moderately well drained soil has a fragipan. It formed in loamy sediment on stream terraces.

The typical sequence, depth, and composition of the layers of this soil are as follows:

Surface layer:
surface to 3 inches, dark grayish brown loam

Subsoil:
3 to 17 inches, light yellowish brown loam
17 to 27 inches, yellowish brown loam that has grayish mottles
27 to 60 inches or more, a fragipan that is loam, mottled in shades of brown and gray

Important soil properties:

Permeability: moderate in the surface layer and upper part of the subsoil and moderately slow in the fragipan.
Available water capacity: moderate
Soil reaction: very strongly acid or strongly acid throughout except where the surface layer has been limed
Surface runoff: medium or slow
Erosion hazard: slight to moderate
Seasonal water table: perched above the fragipan 2.0 to 2.5 feet below the surface in winter and early in spring
Flooding: none
Root zone: the compact and brittle fragipan restricts root penetration in the lower part of the subsoil
Tilth: good, can be tilled throughout a relatively wide range of moisture content

Included with this soil in mapping are small areas of Bigbee soils on low terraces and flood plains, Cahaba soils on low terraces bordering flood plains, Stough soils on stream terraces, and Trebloc soils on upland flats, low stream terraces, and flood plains.

Most areas of this Prentiss soil are used as pasture and woodland. A small acreage is in cropland.

This soil is well suited to row crops, small grains, and truck crops. The hazard of erosion is the main limitation. Adequate cropping systems, conservation tillage, contour farming, terraces, and grassed waterways slow runoff and help control erosion. The return of crop residue to the soil improves soil fertility and tilth and reduces crusting and packing.

This soil is well suited to grasses and legumes for hay and pasture. Overgrazing or grazing when the soil is too wet causes compaction and restricted infiltration. Proper

stocking, pasture rotation, restricted use during wet periods, and weed and brush control help keep the pasture and soil in good condition.

This soil is well suited to loblolly pine, shortleaf pine, sweetgum, cherrybark oak, white oak, and slash pine. Limitations for woodland management are slight. If pines are planted, site preparation is useful to control competition from undesirable plants. Benefits of site preparation do not extend beyond one growing season.

This soil has good potential for use as habitat for openland and woodland wildlife. It has poor potential for use as habitat for wetland wildlife.

This soil has moderate limitations for most urban uses. Wetness is a severe limitation for dwellings with basements. Special design and proper installation can partly overcome this limitation. Moderately slow permeability in the fragipan and seasonal wetness are severe limitations for septic tank absorption fields, but the effects of these limitations can be partly overcome by increasing the size of the absorption field.

This Prentiss soil is in capability subclass IIe and in woodland suitability group 2o7.

25A—Stough fine sandy loam, 0 to 2 percent slopes. This nearly level, somewhat poorly drained soil formed in loamy deposits on stream terraces.

The typical sequence, depth, and composition of the layers of this soil are as follows:

Surface layer:
surface to 5 inches, brown fine sandy loam
Subsurface layer:
5 to 7 inches, light yellowish brown fine sandy loam
Subsoil:
7 to 14 inches, light yellowish brown loam that has strong brown mottles
14 to 60 inches, loam that is mottled in shades of brown and gray and is brittle and compact in 40 to 60 percent of the volume

Important soil properties:

Permeability: moderate in the surface layer and upper part of the subsoil and moderately slow in the lower part
Available water capacity: moderate
Soil reaction: very strongly acid or strongly acid except where the surface layer has been limed
Surface runoff: slow
Erosion hazard: slight
Seasonal water table: perched, 1.0 foot to 1.5 feet below the surface during winter and early in spring
Flooding: none
Root zone: root penetration is somewhat limited in the lower part of the subsoil that is slightly compact and brittle, and by the seasonal water table
Tilth: good, can be worked throughout a fairly wide range of moisture content

Included with this soil in mapping are small areas of Bibb soils on flood plains, Prentiss soils on stream terraces, and Trebloc soils on low stream terraces, upland flats, and flood plains.

Most of the acreage of this Stough soil is used as woodland or pasture. A small acreage is in cropland.

This soil is well suited to row crops, small grains, and truck crops. Seasonal wetness is the main limitation. Adequate cropping systems are needed. Aligning crop rows and surface field ditches to remove excess surface water are also needed when crops are grown. Returning crop residue to the soil improves tilth.

This soil is well suited to grasses and legumes for hay and pasture. Overgrazing or grazing when the soil is too wet causes compaction and restricted infiltration. Proper stocking, controlled grazing, and weed and brush control help to maintain the pasture and soil in good condition.

This soil is well suited to slash pine, sweetgum, cherrybark oak, water oak, and loblolly pine. Seasonal wetness is a moderate limitation for use of equipment, but this limitation can be partly overcome by harvesting during the drier periods. If pines are planted, site preparation is needed to control competition from undesirable plants. Benefits of site preparation do not extend beyond one growing season.

This soil has good potential for use as habitat for openland and woodland wildlife. It has fair potential for use as habitat for wetland wildlife.

This soil has severe limitations for most urban uses. Wetness is the main limitation. It is a moderate limitation for local roads and streets. This limitation can be partly overcome by special design and proper installation. Seasonal wetness and moderately slow permeability are severe limitations for use of this soil as septic tank absorption fields. These limitations can be partly overcome by increasing the field size.

This Stough soil is in capability subclass IIw and in woodland suitability group 2w8.

27—Trebloc silt loam. This nearly level, poorly drained soil formed in moderately fine textured alluvium on stream terraces and upland flats. Slopes range from 0 to 2 percent.

The typical sequence, depth, and composition of the layers of this soil are as follows:

Surface layer:
surface to 4 inches, very dark gray silt loam
Subsurface layer:
4 to 9 inches, light brownish gray silt loam that has yellowish brown mottles
Subsoil:
9 to 60 inches or more, light brownish gray silty clay loam, mottled in shades of brown

Important soil properties:

Permeability: moderately slow
Available water capacity: high
Soil reaction: very strongly acid or strongly acid throughout except where the surface layer has been limed
Surface runoff: slow
Erosion hazard: slight
Seasonal water table: 0.5 to 1.0 foot below the surface in wet periods
Flooding: none or rare; water ponds in low places (fig. 5)
Root zone: the seasonal water table limits the penetration of roots of plants that are not water tolerant
Tilth: good, can be worked more easily during drier periods

Included with this soil in mapping are small areas of Prentiss soils and Stough soils on stream terraces and Quitman soils on low terraces bordering flood plains.

Most of the acreage of this Trebloc soil is used as woodland or pasture. A small acreage is in cropland.

This soil is moderately suited to row crops, small grains, and truck crops. Seasonal wetness is the main limitation. Adequate cropping systems are needed. Aligning crop rows to remove excess water, and surface field ditches are also needed when crops are grown. Returning crop residue to the soil improves tilth.

This soil is moderately suited to grasses and legumes for hay and pasture. Overgrazing or grazing when the soil is too wet causes compaction and restricted infiltration. Proper stocking, pasture rotation, restricted use during wet periods, and weed and brush control help to maintain the pasture and soil in good condition.

Figure 5.—Woodland in an area of Trebloc silt loam, during period of rare flooding.

This soil is well suited to loblolly pine, water oak, green ash, Nuttall oak, Shumard oak, and sweetgum. Seasonal wetness is a severe limitation for use of equipment, but this limitation can be partly overcome by harvesting during the drier periods. If pines are planted, site preparation is needed to control competition from undesirable plants. Benefits of site preparation do not extend beyond one growing season.

Trebloc soil has fair potential for use as habitat for openland and woodland wildlife. It has good potential for use as habitat for wetland wildlife.

This soil has severe limitations for urban use. Seasonal wetness is the main limitation, but low strength is a severe limitation as it affects local roads and streets. Wetness and moderately slow permeability are severe limitations for septic tank absorption fields. These limitations can be partly overcome by special design and proper installation and by increasing the field size.

This Trebloc soil is in capability subclass IIIw and in woodland suitability group 2w9.

28—Trebloc silt loam, frequently flooded. This nearly level, poorly drained soil formed in moderately fine textured alluvial sediment. It is mainly on flood plains of Tallahala and Bogue Homo Creeks and mostly north of Ellisville. This soil is subject to frequent flooding for brief periods in winter and early in spring. The mapped areas are generally as much as a half mile wide and several miles long. Slopes range from 0 to 2 percent.

The typical sequence, depth, and composition of the layers of this soil are as follows:

Surface layer:
surface to 3 inches, dark grayish brown silt loam
Subsoil:
3 to 40 inches, light gray and light brownish gray silty clay loam, mottled in shades of brown and red
40 to 60 inches or more, gray silty clay, mottled in shades of brown and red

Important soil properties:

Soil reaction: very strongly acid or strongly acid throughout except where the surface layer has been limed
Permeability: moderately slow
Available water capacity: high
Surface runoff: slow
Erosion hazard: slight
Seasonal water table: within 0.5 to 1.0 foot below the surface during wet periods in winter and early in spring
Flooding: frequent, for brief periods during winter and early in spring
Root zone: the seasonal water table limits the penetration of roots of plants that are not water tolerant
Tilth: not applicable

Included with this soil in mapping are small areas of Jena soils on flood plains and Quitman soils on low terraces bordering flood plains. Also included are a few areas of soils in similar positions as Trebloc soil but are browner and not as poorly drained. Soils in sloughs and old channels that are ponded except during prolonged droughts are included.

Most of the acreage of this Trebloc soil is used as woodland. A small acreage is in pasture.

This soil is poorly suited to row crops, small grains, and truck crops. Frequent flooding and seasonal wetness are the main limitations. These can be overcome only by a major flood control project and planned drainage system.

This soil is moderately suited to grasses and legumes for hay and pasture. During periods of flooding, cattle need to be moved to pastures at higher elevations. Proper stocking, pasture rotation, restricted use during wet periods, and weed and brush control help to maintain the pasture and soil in good condition.

This soil is well suited to green ash, Nuttall oak, loblolly pine, Shumard oak, water oak, and sweetgum. Seasonal wetness and the hazard of flooding are severe limitations for use of equipment, but these limitations can be partly overcome by planting and harvesting during the drier periods. If pines are planted, site preparation is needed to control competition from undesirable plants. Benefits of site preparation do not extend beyond one growing season. If possible, logging roads should be located at right angles to the stream to prevent washing.

This soil has fair potential for use as habitat for openland and woodland wildlife. It has good potential for use as habitat for wetland wildlife.

This soil has severe limitations for urban use. Seasonal wetness and the hazard of flooding are the main limitations. Low strength is a severe limitation as it affects local roads and streets. This soil has severe limitations for septic tank absorption fields, mainly wetness, the hazard of flooding, and moderately slow permeability of the subsoil.

This Trebloc soil is in capability subclass Vw and in woodland suitability group 2w9.

30B—McLaurin loamy sand, 2 to 5 percent slopes. This gently sloping, well drained soil formed in loamy marine sediment on uplands.

The typical sequence, depth, and composition of the layers of this soil are as follows:

Surface layer:
surface to 5 inches, dark yellowish brown loamy sand
Subsoil:
5 to 26 inches, yellowish red sandy loam

26 to 36 inches, yellowish red sandy loam that has yellowish mottles
36 to 49 inches, yellowish red sandy clay loam
49 to 65 inches, red sandy clay loam

Important soil properties:

Permeability: moderate
Available water capacity: moderate
Soil reaction: very strongly acid or strongly acid throughout except where the surface layer has been limed
Surface runoff: medium or slow
Erosion hazard: slight
Seasonal water table: more than 6 feet below the surface
Flooding: none
Root zone: deep and easily penetrated by plant roots
Tilth: good, can be worked throughout a wide range of moisture content

Included in mapping are small areas of Heidel and Smithdale soils on short upland hillsides, small areas of Lucedale soils on upland ridgetops, and Savannah soils on flatter parts of upland ridgetops.

Most of the acreage of this McLaurin soil is used as woodland and pasture. A small acreage is used as cropland.

This soil is well suited to row crops, small grains, and truck crops. The hazard of erosion is the main limitation. Adequate cropping systems, conservation tillage, contour farming, grassed waterways, and terraces should be used when crops are grown. Cultivated crops that produce large amounts of residue reduce crusting and packing and help to control erosion.

This soil is well suited to grasses and legumes for hay and pasture. Overgrazing increases runoff and the hazard of erosion. Proper stocking, controlled grazing, and weed and brush control help keep the pasture and soil in good condition.

This soil is well suited to loblolly pine, longleaf pine, and slash pine. Limitations to woodland management are slight.

This soil has good potential for use as habitat for openland and woodland wildlife. It has very poor potential for use as habitat for wetland wildlife.

This soil has slight limitations for urban use. The limitation for septic tank absorption fields is slight.

This McLaurin soil is in capability subclass IIe and in woodland suitability group 2o1.

30C—McLaurin loamy sand, 5 to 8 percent slopes. This sloping, well drained soil formed in loamy marine sediment on uplands.

The typical sequence, depth, and composition of the layers of this soil are as follows:

Surface layer:
surface to 5 inches, dark grayish brown loamy sand
Subsurface layer:
5 to 10 inches, brown loamy sand
Subsoil:
10 to 14 inches, strong brown sandy loam
14 to 38 inches, yellowish red sandy loam that has pockets of light gray sand grains
38 to 65 inches or more, yellowish red sandy loam

Important soil properties:

Permeability: moderate
Available water capacity: moderate
Soil reaction: very strongly acid or strongly acid throughout except where the surface layer has been limed
Surface runoff: medium
Erosion hazard: moderate
Seasonal water table: more than 6 feet below the surface
Flooding: none
Root zone: deep and easily penetrated by plant roots
Tilth: good, can be worked throughout a wide range of moisture content

Included with this soil in mapping are small areas of Heidel and Smithdale soils on short upland hillsides and Savannah soils on flatter parts of upland ridgetops.

Most of the acreage of this McLaurin soil is used as pasture and woodland. A small acreage is used as row crops (fig. 6).

This soil is moderately suited to row crops, small grains, and truck crops. The hazard of erosion is the main limitation. Adequate cropping systems, conservation tillage, contour farming, grassed waterways, and terraces should be used when crops are grown. Cultivated crops that produce large amounts of residue reduce crusting and packing and help to control erosion.

This soil is moderately suited to grasses and legumes for hay and pasture. Overgrazing increases runoff and the hazard of erosion. Proper stocking, controlled grazing, and weed and brush control help keep the pasture and soil in good condition.

This soil is well suited to loblolly pine, longleaf pine, and slash pine. Limitations to woodland management are slight.

This soil has good potential for use as habitat for openland and woodland wildlife. It has very poor potential for use as habitat for wetland wildlife.

This soil has slight limitations for urban use. Steepness of slope is a moderate limitation for small commercial buildings. Special design and proper installation can partly overcome this limitation. The limitation of this soil for septic tank absorption fields is slight.

This McLaurin soil is in capability subclass IIIe and in woodland suitability group 2o1.

Figure 6.—Soybean stubble on McLaurin loamy sand, 5 to 8 percent slopes. Terraces slow runoff and help control erosion on sloping land.

31B—Benndale fine sandy loam, 2 to 5 percent slopes. This gently sloping, well drained soil formed in loamy marine deposits or alluvium on uplands and terraces.

The typical sequence, depth, and composition of the layers of this soil are as follows:

Surface layer:
surface to 4 inches, dark grayish brown fine sandy loam

Subsoil:
4 to 10 inches, yellowish brown fine sandy loam
10 to 42 inches, strong brown sandy loam
42 to 60 inches or more, brownish yellow sandy loam that has strong brown mottles

Important soil properties:

Permeability: moderate
Available water capacity: moderate
Soil reaction: very strongly acid or strongly acid throughout except where the surface layer has been limed
Surface runoff: medium or slow
Erosion hazard: slight
Seasonal water table: more than 6 feet below the surface
Flooding: none
Root zone: deep and easily penetrated by plant roots
Tilth: good, can be worked throughout a wide range of moisture content

Included with this soil in mapping are small areas of Heidel, Malbis, and Ruston soils on uplands. Also included are Harleston soils at lower elevations on low terraces bordering flood plains.

Most of the acreage of this Benndale soil is used as woodland. A small acreage is used as row crops or pasture. This soil is well suited to row crops, truck crops, and small grains. The hazard of erosion is the main limitation. Adequate cropping systems should be used when crops are grown. Conservation tillage, contour farming, grassed waterways, and terraces are suitable management practices on this soil. Cultivated crops that

produce large amounts of residue reduce crusting and packing and help to control erosion.

This soil is well suited to grasses and legumes for hay and pasture. Overgrazing increases runoff and the hazard of erosion. Proper stocking, controlled grazing, and weed and brush control help keep the pasture and soil in good condition.

This soil is well suited to loblolly pine, longleaf pine, and slash pine. Limitations for woodland management are slight. If pine trees are planted, site preparation is needed to control competition from undesirable plants. Benefits of site preparation do not extend beyond one growing season.

This soil has good potential for use as habitat for openland and woodland wildlife. It has very poor potential for use as habitat for wetland wildlife.

Benndale soil has slight limitations for urban use. The limitation for septic tank absorption fields is slight.

This Benndale soil is in capability subclass IIe and in woodland suitability group 2o1.

31C—Benndale fine sandy loam, 5 to 8 percent slopes. This sloping, well drained soil formed in loamy marine deposits on upland ridgetops and hillsides.

The typical sequence, depth, and composition of the layers of this soil are as follows:

Surface layer:
surface to 4 inches, dark grayish brown fine sandy loam
Subsurface layer:
4 to 10 inches, light yellowish brown fine sandy loam
Subsoil:
10 to 22 inches, strong brown loam
22 to 44 inches, yellowish brown loam that has red mottles below a depth of 33 inches
44 to 60 inches or more, sandy loam, mottled in shades of red, brown, and gray

Important soil properties:

Permeability: moderate
Available water capacity: moderate
Soil reaction: very strongly acid or strongly acid throughout except where the surface layer has been limed
Surface runoff: medium
Erosion hazard: moderate
Seasonal water table: more than 6 feet below the surface
Flooding: none
Root zone: deep and easily penetrated by plant roots
Tilth: good, can be worked throughout a wide range of moisture content

Included with this soil in mapping are small areas of Heidel and Malbis soils on uplands.

Most of the acreage of this Benndale soil is used as woodland. A small acreage is used as pasture or row crops.

This soil is moderately suited to row crops, small grains, and truck crops. The hazard of erosion is the main limitation. Adequate cropping systems should be used when crops are grown. Conservation tillage, contour farming, terraces, grassed waterways, and contour stripcropping are suitable management practices on this soil. Cultivated crops that produce large amounts of residue reduce crusting and packing and help to control erosion.

This soil is well suited to grasses and legumes for hay and pasture. Overgrazing increases runoff and the hazard of erosion. Proper stocking, controlled grazing, and weed and brush control help keep the pasture and soil in good condition.

This soil is well suited to loblolly pine, longleaf pine, and slash pine. Plant competition is a moderate limitation in establishing pine trees. If pines are planted, site preparation is needed to control competition from undesirable plants. Benefits of site preparation do not extend beyond one growing season.

This soil has good potential for use as habitat for openland and woodland wildlife. It has very poor potential for use as habitat for wetland wildlife.

This soil has slight limitations for most urban uses. Steepness of slope is a moderate limitation for small commercial buildings. The limitation for septic tank absorption fields is slight.

This Benndale soil is in capability subclass IIIe and in woodland suitability group 2o1.

33A—Lucedale loam, 0 to 2 percent slopes. This level, well drained soil formed in loamy material on broad upland ridgetops.

The typical sequence, depth, and composition of the layers of this soil are as follows:

Surface layer:
surface to 7 inches, dark reddish brown loam
Subsoil layer:
7 to 43 inches, dark red loam
43 to 70 inches, dark reddish brown loam that has reddish mottles below a depth of 62 inches

Important soil properties:

Permeability: moderate
Available water capacity: moderate to high
Soil reaction: very strongly acid or strongly acid throughout except where the surface layer has been limed
Surface runoff: slow
Erosion hazard: slight
Seasonal water table: more than 6 feet below the surface

Flooding: none
Root zone: deep and easily penetrated by plant roots
Tilth: good, can be worked throughout a wide range of moisture content

Included in mapping are small areas of McLaurin soils on uplands, gently sloping surfaces and Savannah soils on slightly lower elevations on uplands.

Most of the acreage of this Lucedale soil is used for row crops and pasture. The remainder is in woodland.

This soil is well suited to row crops, small grains, and truck crops. Management limitations are slight. Conservation tillage and returning crop residue to the soil improve tilth and reduce crusting and packing after heavy rainfall. Aligning crop rows to remove excess surface water is needed.

This soil is well suited to grasses and legumes for hay and pasture. Overgrazing or grazing when the soil is too wet causes compaction and restricted infiltration. Proper stocking, controlled grazing, and weed and brush control help keep the soil and pasture in good condition.

This soil is well suited to loblolly pine, longleaf pine, and slash pine. Limitations for woodland management are slight.

This soil has good potential for use as habitat for openland and woodland wildlife. It has very poor potential for use as habitat for wetland wildlife.

This soil has slight limitations for most urban uses. Limitations for septic tank absorption fields are slight.

This Lucedale soil is in capability class I and in woodland suitability group 2o1.

34E—Smithdale fine sandy loam, 8 to 15 percent slopes. This sloping to moderately steep, well drained soil formed in loamy marine deposits on uplands.

The typical sequence, depth, and composition of the layers of this soil are as follows:

Surface layer:
surface to 3 inches, brown fine sandy loam
Subsurface layer:
3 to 6 inches, yellowish brown fine sandy loam
Subsoil:
6 to 53 inches, yellowish red and red sandy clay loam that has mottles in shades of brown and red
53 to 68 inches or more, red loam that has brown mottles

Important soil properties:

Permeability: moderate in the surface layer and upper part of the subsoil and moderately rapid in the lower part of the subsoil
Available water capacity: moderate
Soil reaction: very strongly acid or strongly acid throughout except where the surface layer has been limed
Surface runoff: rapid
Erosion hazard: moderate to severe
Seasonal water table: more than 6 feet below the surface
Flooding: none
Root zone: deep and easily penetrated by plant roots
Tilth: not applicable

Included in mapping are McLaurin, Ruston, and Savannah soils on slopes and ridgetops.

Most of the acreage of this Smithdale soil is used as woodland. A small acreage is in pasture.

This soil is poorly suited to row crops, small grains, and truck crops. The severe hazard of erosion, rapid runoff, and steepness of slope are the main limitations.

This soil is moderately suited to grasses and legumes for hay and pasture (fig. 7). Overgrazing increases runoff and the hazard of erosion. Proper stocking, controlled grazing, and weed and brush control help keep the pasture and soil in good condition.

This soil is well suited to loblolly pine, shortleaf pine, longleaf pine, and slash pine. Woodland management limitations are slight.

This soil has good potential for use as habitat for openland and woodland wildlife. It has very poor potential for use as habitat for wetland wildlife.

This soil has moderate limitations for most urban uses. Steepness of slope is a severe limitation for small commercial buildings and a moderate limitation for septic tank absorption fields. However, special design and proper installation can partly overcome this limitation.

This Smithdale soil is in capability subclass VIe and in woodland suitability group 2o1.

35B—Ruston fine sandy loam, 2 to 5 percent slopes. This gently sloping, well drained soil formed in loamy marine sediment on uplands.

The typical sequence, depth, and composition of the layers of this soil are as follows:

Surface layer:
surface to 10 inches, yellowish brown fine sandy loam
Subsoil:
10 to 24 inches, yellowish red and red sandy clay loam
24 to 39 inches, yellowish red sandy loam
39 to 51 inches, yellowish red fine sandy loam that has pockets of light yellowish brown sandy loam
51 to 60 inches or more, red sandy clay loam

Important soil properties:

Permeability: moderate
Available water capacity: moderate
Soil reaction: very strongly acid or strongly acid throughout except where the surface layer has been limed

Figure 7.—Bahiagrass pasture and mixed pines and hardwoods on Smithdale fine sandy loam, 8 to 15 percent slopes.

Surface runoff: medium or slow
Erosion hazard: moderate
Seasonal water table: more than 6 feet below the surface
Flooding: none
Root zone: deep and easily penetrated by plant roots
Tilth: good, can be worked throughout a wide range of moisture content

Included in mapping are small areas of Heidel and Smithdale soils on steeper upland hillsides than Ruston soil. Also included are Savannah soils on upland flats and some small areas of soils that are sandy loam in the lower part of the subsoil.

Most of the acreage of this Ruston soil is used for row crops or pasture. A small acreage is used as woodland.

The soil is well suited to row crops, small grains, and truck crops. The hazard of erosion is the main limitation. Adequate cropping systems should be used when crops are grown. Conservation tillage, contour farming, grassed waterways, and terraces are suitable management practices on this soil. Cultivated crops that produce large amounts of residue reduce crusting and packing and help to control erosion.

This soil is well suited to grasses and legumes for hay and pasture. Overgrazing increases runoff and the hazard of erosion. Proper stocking, controlled grazing, and weed and brush control help keep the pasture and soil in good condition.

This soil is well suited to loblolly pine, slash pine, and longleaf pine. Limitations for woodland management are slight.

This soil has good potential for use as habitat for openland and woodland wildlife. It has very poor potential for use as habitat for wetland wildlife.

This soil has slight limitations for urban use. Low strength is a moderate limitation for local roads and streets. Moderate permeability is a moderate limitation for septic tank absorption fields, but this can be partly overcome by increasing the field size.

The Ruston soil is in capability subclass IIe and in woodland suitability group 2o1.

35C—Ruston fine sandy loam, 5 to 8 percent slopes. This sloping, well drained soil formed in loamy marine sediment on uplands.

The typical sequence, depth, and composition of the layers of this soil are as follows:

Surface layer:
surface to 10 inches, yellowish brown fine sandy loam
Subsoil:
10 to 18 inches, red sandy clay loam
18 to 33 inches, red fine sandy loam

33 to 38 inches, yellowish red sandy loam that has yellowish brown mottles
38 to 62 inches, yellowish red loamy sand
62 to 65 inches or more, yellowish red fine sandy loam

Important soil properties:

Permeability: moderate
Available water capacity: moderate
Soil reaction: very strongly acid or strongly acid throughout except where the surface layer has been limed
Surface runoff: medium
Erosion hazard: moderate
Seasonal water table: more than 6 feet below the surface
Flooding: none
Root zone: deep and easily penetrated by plant roots
Tilth: good, can be worked throughout a wide range of moisture content

Included with this soil in mapping are small areas of Heidel and Smithdale soils on short, upland hillsides and Savannah soils on narrow ridgetops. Also included are some small areas of soils that are sandy loam in the lower part of the subsoil.

Most of the acreage of this Ruston soil is used for row crops or pasture. A small acreage is used as woodland.

This soil is moderately suited to row crops, small grains, and truck crops. The hazard of erosion is the main limitation. Adequate cropping systems should be used when crops are grown. Conservation tillage, contour farming, grassed waterways, and terraces are suitable management practices on this soil. Cultivated crops that produce large amounts of residue reduce crusting and packing and help to control erosion.

This soil is well suited to grasses and legumes for hay and pasture. Overgrazing increases runoff and the hazard of erosion. Proper stocking, controlled grazing, and weed and brush control help keep the pasture and soil in good condition.

This soil is well suited to loblolly pine, slash pine, and longleaf pine. Limitations for woodland management are slight.

This soil has good potential for use as habitat for openland and woodland wildlife. It has very poor potential for use as habitat for wetland wildlife.

This soil has slight limitations for most urban uses. Low strength is a moderate limitation for local streets and roads, and steepness of slope is a moderate limitation for small commercial buildings. However, special design and proper installation can partly overcome these limitations. Because of moderate permeability, this soil has moderate limitations for septic tank absorption fields. Moderate permeability can be partly overcome by increasing the field size.

The Ruston soil is in capability subclass IIIe and in woodland suitability group 2o1.

41A—Savannah loam, 0 to 2 percent slopes. This nearly level, moderately well drained soil has a fragipan. Savannah soil formed in loamy marine and fluvial terrace deposits on uplands and terraces.

The typical sequence, depth, and composition of the layers of this soil are as follows:

Surface layer:
surface to 7 inches, brown loam
Subsoil:
7 to 19 inches, yellowish brown loam
19 to 27 inches, yellowish brown loam that has yellowish red mottles
27 to 60 inches, a fragipan that is loam, mottled in shades of yellow, brown, red, and gray

Important soil properties:

Permeability: moderate in the surface layer and upper part of the subsoil and moderately slow in the fragipan
Available water capacity: moderate
Soil reaction: very strongly acid or strongly acid throughout except where the surface layer has been limed
Surface runoff: slow
Erosion hazard: slight
Seasonal water table: perched above the fragipan about 1.5 to 3.0 feet below the surface late in winter and early in spring
Flooding: none
Root zone: root penetration is restricted by the brittle and compact fragipan in the lower part of the subsoil
Tilth: good, this soil is friable and can be worked throughout a wide range of moisture content

Included with this soil in mapping are small areas of Lucedale soils on broad upland ridgetops and McLaurin and Ruston soils on narrow upland ridgetops.

Most areas of this Savannah soil are used as cropland and pasture. A small acreage is in woodland.

This soil is well suited to row crops, small grains, and truck crops. Seasonal wetness is the main limitation. Adequate cropping systems, surface field ditches, aligning plant rows to remove excess surface water, and grassed waterways are needed when crops are grown. In some years, seedbed preparation and tillage are delayed because of wetness. Conservation tillage and the return of crop residue to the soil improve soil fertility and tilth and reduce crusting and packing.

This soil is well suited to grasses and legumes for hay and pasture. Overgrazing or grazing when the soil is too wet causes compaction and restricted infiltration. Proper

stocking, pasture rotation, restricted use during wet periods, and weed and brush control help keep the pasture and soil in good condition.

This soil is well suited to loblolly pine, longleaf pine, sweetgum, American sycamore, yellow-poplar, and slash pine. Limitations for woodland management are slight. If pines are planted, site preparation is needed to control competition from undesirable plants. Benefits of site preparation do not extend beyond one growing season.

This soil has good potential for use as habitat for openland and woodland wildlife. It has very poor potential for use as habitat for wetland wildlife.

This soil has moderate limitations for most urban uses. Seasonal wetness is the main limitation. It is a severe limitation for dwellings with basements. Special design and proper installation can partly overcome these limitations. Moderately slow permeability in the fragipan is a severe limitation for septic tank absorption fields, but this can be partly overcome by increasing the size of the absorption field.

This Savannah soil is in capability subclass IIw and in woodland suitability group 2o7.

41B—Savannah loam, 2 to 5 percent slopes. This gently sloping, moderately well drained soil has a fragipan. Savannah soil formed in loamy marine and fluvial terrace deposits on uplands and terraces.

The typical sequence, depth, and composition of the layers of this soil are as follows:

Surface layer:
surface to 6 inches, brown loam
Subsurface layer:
6 to 8 inches, yellowish brown loam
Subsoil:
8 to 21 inches, yellowish brown loam
21 to 41 inches, mottled yellowish brown, brownish yellow, light gray, and strong brown loam fragipan
41 to 62 inches, mottled strong brown and light gray loam fragipan

Permeability: moderate in the surface layer and upper part of the subsoil and moderately slow through the fragipan
Available water capacity: moderate
Soil reaction: very strongly acid or strongly acid throughout except where the surface layer has been limed
Surface runoff: medium or slow
Erosion hazard: slight to moderate
Seasonal water table: perched above the fragipan about 1.5 to 3.0 feet below the surface late in winter and early in spring
Flooding: none
Root zone: root penetration is restricted by the compact and brittle fragipan in the lower part of the subsoil
Tilth: good, surface layer is friable and easily tilled throughout a wide range of moisture content

Included with this soil in mapping are small areas of Freest, Malbis, McLaurin, and Ruston soils on narrow upland ridgetops and Smithdale soils on short upland hillsides.

Most areas of this Savannah soil are used as pasture and cropland. A small acreage is in woodland.

This soil is well suited to row crops, small grains, and truck crops. The hazard of erosion and seasonal wetness are the main limitations. Adequate cropping systems, conservation tillage, contour farming, terraces, and grassed waterways slow runoff and help control erosion. The return of crop residue to the soil improves soil fertility and tilth and reduces crusting and packing.

This soil is well suited to grasses and legumes for hay and pasture. Overgrazing or grazing when the soil is too wet causes surface compaction and restricted infiltration. Proper stocking, pasture rotation, restricted use during wet periods, and weed and brush control help keep the pasture and soil in good condition.

This soil is well suited to loblolly pine, longleaf pine, sweetgum, American sycamore, yellow-poplar, and slash pines. Limitations for woodland management are slight. If pines are planted, site preparation is needed to control competition from undesirable plants. Benefits of site preparation do not extend beyond one growing season.

This soil has good potential for use as habitat for openland and woodland wildlife. It has very poor potential for use as habitat for wetland wildlife.

This soil has moderate limitations for most urban uses. Seasonal wetness is the main limitation. It is a severe limitation for dwellings with basements. Special design and proper installation can partly overcome these limitations. The moderately slow permeability rate in the fragipan is a severe limitation for septic tank absorption fields, but this can be partly overcome by increasing the size of the absorption field.

This Savannah soil is in capability subclass IIe and in woodland suitability group 2o7.

41C—Savannah loam, 5 to 8 percent slopes. This sloping, moderately well drained soil has a fragipan. Savannah soil formed in loamy marine and fluvial terrace deposits on uplands and terraces.

The typical sequence, depth, and composition of the layers of this soil are as follows:

Surface layer:
surface to 4 inches, very dark grayish brown loam
Subsurface layer:
4 to 7 inches, pale brown loam
Subsoil:
7 to 17 inches, yellowish brown loam
17 to 24 inches, yellowish brown loam that has yellowish red mottles

24 to 60 inches or more, compact and brittle loam fragipan that is mottled in shades of red, gray, and brown

Important soil properties:

Permeability: moderate in the surface layer and upper part of the subsoil and moderately slow through the fragipan
Available water capacity: moderate
Soil reaction: very strongly acid or strongly acid throughout except where the surface layer has been limed
Surface runoff: medium
Erosion hazard: moderate
Seasonal water table: perched above the fragipan 1.5 to 3.0 feet below the surface late in winter and early in spring
Flooding: none
Root zone: root penetration is limited because of the compact and brittle fragipan in the lower part of the subsoil
Tilth: good, surface layer is friable and can be worked throughout a wide range of moisture content.

Included with this soil in mapping are small areas of Freest soils on the lower parts of hillsides, Malbis soils on the upper parts of hillsides, and Smithdale soils on the steeper parts of hillsides.

Most areas of this Savannah soil are used as pasture or woodland. A small acreage is in cropland.

This soil is moderately suited to row crops, small grains, and truck crops. The hazard of erosion and seasonal wetness are the main limitations. Adequate cropping systems, conservation tillage, contour farming, terraces, grassed waterways, and cropping systems that include grasses and legumes help slow runoff and control erosion. Returning crop residue to the soil improves fertility and tilth and reduces crusting and packing.

This soil is well suited to grasses and legumes for hay and pasture. Overgrazing or grazing when the soil is too wet causes compaction and restricted infiltration. Proper stocking, pasture rotation, restricted use during wet periods, and weed and brush control help keep the pasture and soil in good condition.

This soil is well suited to loblolly pine, longleaf pine, sweetgum, American sycamore, yellow-poplar, and slash pine. Limitations for woodland management are slight. If pines are planted, site preparation is needed to control competition from undesirable plants. Benefits of site preparation do not extent beyond one growing season.

This soil has good potential for use as habitat for openland and woodland wildlife. It has very poor potential for use as habitat for wetland wildlife.

This soil has moderate limitations for most urban uses. Seasonal wetness is the main limitation. It is a severe limitation for dwellings with basements. Wetness and steepness of slope are moderate limitations for small commercial buildings. Special design and proper installation can partly overcome these limitations. The moderately slow permeability rate in the fragipan is a severe limitation for septic tank absorption fields, but this can be partly overcome by increasing the size of the absorption field.

This Savannah soil is in capability subclass IIIe and in woodland suitability group 2o7.

43B—Malbis fine sandy loam, 2 to 5 percent slopes. This gently sloping, moderately well drained soil formed in loamy marine sediment on uplands.

The typical sequence, depth, and composition of the layers of this soil are as follows:

Surface layer:
surface to 5 inches, grayish brown fine sandy loam
Subsurface layer:
5 to 8 inches, yellowish brown loam
Subsoil:
8 to 18 inches, yellowish brown loam
18 to 32 inches, strong brown loam that has yellowish red mottles
32 to 38 inches, strong brown loam that has brownish yellow mottles and common nodules of red plinthite
38 to 60 inches or more, mottled strong brown, yellowish red, red, and very pale brown clay loam

Important soil properties:

Permeability: moderate in the surface layer and upper part of the subsoil and moderately slow in the lower part
Available water capacity: moderate
Soil reaction: very strongly acid or strongly acid throughout except where the surface layer has been limed
Surface runoff: medium or slow
Erosion hazard: moderate
Seasonal water table: perched 2.5 to 4.0 feet below the surface during winter and early in spring
Flooding: none
Root zone: deep and easily penetrated by plant roots
Tilth: good, can be worked throughout a wide range of moisture content

Included with this soil in mapping are small areas of Benndale soils on uplands and terraces, Savannah soils on broader upland ridgetops, and Susquehanna soils that are near slope breaks on uplands.

Most of the acreage of this Malbis soil is used for row crops or pasture. A small acreage is used as woodland.

This soil is well suited to row crops, small grains, and truck crops. The hazard of erosion is the main limitation. Adequate cropping systems should be used when crops

are grown. Conservation tillage, contour farming, grassed waterways, and terraces are suitable management practices on this soil. Cultivated crops that produce large amounts of residue reduce crusting and packing and help to control erosion.

This soil is well suited to grasses and legumes for hay and pasture. Overgrazing increases runoff and the hazard of erosion. Proper stocking, controlled grazing, and weed and brush control help keep the pasture and soil in good condition.

This soil is well suited to loblolly pine, slash pine, and longleaf pine (fig. 8). Limitations for woodland management are slight.

This soil has good potential for use as habitat for openland and woodland wildlife. It has very poor potential for use as habitat for wetland wildlife.

This soil has slight limitations for urban use. Low strength is a moderate limitation for local roads and streets, and wetness is a moderate limitation for dwellings with basements. These limitations can be partly overcome by special design and proper installation. The limitation of this soil for septic tank absorption fields is severe because of wetness and moderately slow permeability, but this can be partly overcome by increasing the field size.

This Malbis soil is in capability subclass IIe and in woodland suitability group 2o1.

Figure 8.—Longleaf pine stump from an area of Malbis fine sandy loam, 5 to 8 percent slopes. A plinthite layer stopped development of the tap root.

43C—Malbis fine sandy loam, 5 to 8 percent slopes. This sloping, moderately well drained soil formed in loamy marine sediment on uplands.

The typical sequence, depth, and composition of the layers of this soil are as follows:

Surface layer:
surface to 6 inches, dark grayish brown fine sandy loam
Subsurface layer:
6 to 16 inches, light yellowish brown fine sandy loam
Subsoil:
16 to 20 inches, yellowish brown loam
20 to 24 inches, yellowish brown loam that has common nodules of red plinthite
24 to 60 inches or more, mottled yellowish red, brownish yellow, and light gray loam

Important soil properties:

Permeability: moderate in the upper part of the subsoil and moderately slow in the lower part
Available water capacity: moderate
Soil reaction: very strongly acid or strongly acid throughout except where the surface layer has been limed
Surface runoff: medium
Erosion hazard: moderate
Seasonal water table: perched 2.5 to 4.0 feet below the surface during winter and early in spring
Flooding: none
Root zone: deep and easily penetrated by plant roots
Tilth: good, can be worked throughout a wide range of moisture content

Included with this soil in mapping are small areas of Benndale soils on uplands and terraces, Savannah soils on upland ridgetops, Susquehanna soils on lower slopes of uplands, and soils similar to Malbis soil but having less than 5 percent plinthite nodules.

Most of the acreage of this Malbis soil is used as pasture and woodland. A small acreage is used as cropland.

This soil is moderately suited to row crops, small grains, and truck crops. The hazard of erosion is the main limitation. When crops are grown, conservation tillage, crop rotation, contour farming, contour stripcropping, grassed waterways, and terraces are suitable management practices. Cultivated crops that produce large amounts of residue reduce crusting and packing and help to control erosion.

This soil is moderately suited to grasses and legumes for hay and pasture. Overgrazing increases runoff and the hazard of erosion. Proper stocking, controlled grazing, and weed and brush control help keep the pasture and soil in good condition.

This soil is well suited to loblolly pine, slash pine, and longleaf pine. Limitations for woodland use and management are slight.

This soil has good potential for use as habitat for openland and woodland wildlife. It has very poor potential for use as habitat for wetland wildlife.

This soil has moderate limitations for most urban uses. Low strength as it affects streets and roads, wetness, and steepness of slopes are the main limitations. Special design and proper installation can partly overcome these limitations. Moderately slow permeability and wetness are severe limitations for use of this soil as septic tank absorption fields. These limitations can be partly overcome by special design and proper installation.

This Malbis soil is in capability subclass IIIe and in woodland suitability group 2o1.

46—Pits-Udorthents complex. These areas consist of gravel pits, sand pits, and clay pits that are scattered throughout the county. Depth to these materials is as much as 25 feet or more. Gravel pits, sand pits, and borrow pits are in McLaurin, Heidel, Ruston, and Smithdale soils. Clay pits are in Susquehanna soils or in clay deposits that are beneath the solum of soils that overlie the Hattiesburg and Catahoula Formations.

Pits make up about 60 percent of the map unit. Some abandoned pits are reverting to development of natural vegetation, such as briars, sagegrass, and stunted, scraggly pine trees. A few areas have a good stand of pine trees. Pits that have clay floors have intermittent ponded water that is a habitat for aquatic creatures, such as frogs. In shallow places, these ponded areas are a breeding ground for mosquitoes.

Udorthents make up about 25 percent of the map unit. Typically, they consist of piles of spoil and areas so severely eroded by water that soil horizons are destroyed beyond recognition.

Included with these miscellaneous areas in mapping are small areas of Heidel, McLaurin, Ruston, Smithdale, and Savannah soils on uplands. The included soils make up about 15 percent of the map unit.

In some of the larger pits, the soil material supports low value grass and trees. Most of this onsite vegetation is useful only for erosion control, cover for wildlife, and nesting sites for songbirds. Many areas are without vegetation. Pits are not suited to growing crops, pasture grasses and legumes, and commercial trees. They have moderate to severe limitations for most urban uses, including landfills, although many areas have been used for dumping refuse and debris from rural residents and hamlets. If these areas are used for waste disposal, rapid permeability of the gravelly and sandy underlying material causes a potential contamination hazard to ground water and nearby streams.

Pits and Udorthents are not assigned to a capability subclass or to a woodland suitability group.

80—Susquehanna-Petal association, rolling. This map unit consists of strongly sloping to moderately steep, somewhat poorly drained Susquehanna soil and strongly sloping to moderately steep, moderately well drained Petal soil in a regular and repeating pattern. The composition varies somewhat between mapped areas, but mapping has been controlled well enough for the expected use of the soils. Susquehanna soil is on upland hillsides at middle slopes and lower elevations. Slopes range from 5 to 15 percent of Susquehanna soil. It formed in clayey marine sediment. Petal soil is on narrow upland ridgetops and upper parts of hillsides. It formed in loamy and clayey marine sediment. Slopes range from 8 to 15 percent on Petal soil.

Susquehanna soils and closely similar soils make up about 43 percent of the association.

The typical sequence, depth, and composition of the layers of Susquehanna soil are as follows:

Surface layer:
surface to 5 inches, dark gray fine sandy loam
Subsurface layer:
5 to 12 inches, pale brown fine sandy loam
Subsoil:
12 to 19 inches, red clay, mottled in shades of brown and gray
19 to 26 inches, mottled light gray, red, and yellowish brown clay
26 to 41 inches, light brownish gray clay, mottled in shades of brown and red
41 to 64 inches or more, light brownish gray silty clay, mottled in shades of brown

Important soil properties of the Susquehanna soil:

Permeability: very slow
Available water capacity: high
Soil reaction: very strongly acid or strongly acid throughout except where the surface layer has been limed
Surface runoff: rapid
Erosion hazard: severe
Seasonal water table: more than 6 feet below the surface
Flooding: none
Root zone: root penetration is somewhat restricted by the firm, sticky and plastic, clayey subsoil
Tilth: not applicable

Petal and closely similar soils make up about 31 percent of the association.

The typical sequence, depth, and composition of the layers of the Petal soil are as follows:

Surface layer:
surface to 5 inches, dark grayish brown fine sandy loam
Subsurface layer:
5 to 14 inches, pale brown fine sandy loam
Subsoil:
14 to 24 inches, strong brown loam that has a few reddish mottles
24 to 39 inches, mottled red, yellowish brown, and light gray clay
39 to 63 inches or more, light brownish gray clay that has dark red mottles

Important soil properties of the Petal soil:

Permeability: moderate in the upper part of the subsoil and slow in the lower part
Available water capacity: high
Soil reaction: very strongly acid or strongly acid throughout except where the surface layer has been limed
Surface runoff: rapid
Erosion hazard: severe
Seasonal water table: perched above the clayey lower part of the subsoil at a depth of 2.5 to 3.5 feet in winter and early in spring
Flooding: none
Root zone: root penetration is somewhat restricted by the firm, sticky and plastic, clayey lower part of the subsoil.
Tilth: not applicable

Included with these soils in mapping are Benndale soils on uplands and terraces, Bibb soils on narrow flood plains, and Malbis and Savannah soils on uplands. The included soils make up about 26 percent of the map unit.

Most of the acreage in this association is used as woodland. Because of rapid runoff and the severe hazard of erosion, Susquehanna and Petal soils are poorly suited to row crops, small grains, and truck crops. A permanent vegetation of grasses and legumes or trees should be maintained on these soils to control erosion.

These soils are moderately suited to pasture. Overgrazing or grazing when the soil is too wet can cause compaction and restricted infiltration. Proper stocking, controlled grazing, and weed and brush control help keep the pasture and soils in good condition.

Susquehanna soil is moderately suited to loblolly pine and shortleaf pine. Seasonal wetness of Susquehanna soil is a moderate limitation for use of equipment. The clayey texture of the subsoil and competition from undesirable plants are also limitations. Scheduling management and harvesting operations during dry periods, and good site preparation help to minimize these problems. Petal soil is well suited to loblolly pine, slash pine, shortleaf pine, cherrybark oak, and longleaf pine. Woodland management limitations are slight on Petal soil.

Susquehanna and Petal soils have good potential for use as habitat for openland and woodland wildlife. They

have very poor potential for use as habitat for wetland wildlife.

Urban use of Susquehanna soil is severely limited because of the high shrink-swell potential of the subsoil, low strength as it affects local roads and streets, and steepness of slopes as it affects sites for small commercial buildings. Petal soil has moderate limitations for urban use. Steepness of slopes and shrinking and swelling are the main limitations. Steepness of slopes is a severe limitation for small commercial buildings, and shrinking and swelling is a severe limitation for dwellings with basements. These limitations can be partly overcome by special design and proper installation. Slow permeability is a severe limitation for the use of Susquehanna and Petal soils for septic tank absorption fields, and wetness is a severe limitation on Petal soil. These limitations can be partly overcome by increasing the size of the septic tank absorption field.

Susquehanna and Petal soils are in capability subclass VIe. Susquehanna soil is in woodland suitability group 3c2, and Petal soil is in woodland suitability group 2o7.

81B—Freest fine sandy loam, 2 to 5 percent slopes. This gently sloping, moderately well drained soil formed in loamy and clayey material on uplands.

The typical sequence, depth, and composition of the layers of this soil are as follows:

Surface layer:
surface to 2 inches, brown fine sandy loam
Subsurface layer:
2 to 9 inches, brownish yellow sandy loam
Subsoil:
9 to 26 inches, clay loam that is mottled in shades of red and brown
26 to 60 inches, clay that is mottled in shades of red, brown, and gray

Important soil properties:

Permeability: moderately slow in the upper part of the subsoil and slow in the lower part
Available water capacity: moderate to high
Soil reaction: very strongly acid or strongly acid throughout except where the surface layer has been limed
Surface runoff: medium or slow
Erosion hazard: slight
Seasonal water table: 1.5 to 2.5 feet below the surface late in winter and early in spring
Flooding: none
Root zone: root penetration is somewhat limited in the lower part of the subsoil that is clayey and firm, sticky and plastic.
Tilth: good, but the soil can be worked more easily during the drier periods

Included with this soil in mapping are small areas of Petal and Susquehanna soils on short, steep upland hillsides and Savannah soils on flatter uplands ridgetops.

Most of the acreage of this Freest soil is used as woodland. A small acreage is used for row crops or pasture.

This soil is well suited to row crops, truck crops, and small grains. Wetness and the hazard of erosion are the main limitations. Adequate cropping systems, conservation tillage, contour farming, crop rotation, grassed waterways, and terraces are suitable management practices on this soil to help control erosion when crops are grown. Cultivated crops that produce large amounts of residue reduce crusting and packing and also help to control erosion.

This soil is moderately suited to grasses and legumes for hay and pasture. Overgrazing increases runoff and the hazard of erosion. Proper stocking, controlled grazing, and weed and brush control help keep the pasture and soil in good condition.

This soil is well suited to loblolly pine, slash pine, and shortleaf pine. Plant competition is a moderate limitation in establishing pine trees. If pines are planted, site preparation is needed to control competition from undesirable plants. Benefits of site preparation do not extend beyond one growing season. Wetness is a moderate limitation for use of equipment during wet periods. This can be avoided by scheduling management and harvesting operations during the drier periods.

This soil has good potential for use as habitat for openland and woodland wildlife. It has poor potential for use as habitat for wetland wildlife.

This soil has severe limitations for urban use. Low strength as it affects local roads and streets and high shrink-swell properties of the subsoil are severe limitations. Special design and proper installation can partly overcome these limitations. The slow permeability of the clayey subsoil is a severe limitation for use of this soil as a septic tank absorption field, but this can be partly overcome by increasing the field size.

This Freest soil is in capability subclass IIe and in woodland suitability group 2w8.

81C—Freest fine sandy loam, 5 to 8 percent slopes. This sloping, moderately well drained soil formed in loamy and clayey material on uplands.

The typical sequence, depth, and composition of the layers of this soil are as follows:

Surface layer:
surface to 4 inches, grayish brown fine sandy loam
Subsurface layer:
4 to 7 inches, pale brown fine sandy loam
Subsoil:
7 to 23 inches, yellowish brown loam that has red mottles in the lower part

23 to 26 inches, loam that is mottled in shades of brown, red, and gray
26 to 62 inches or more, clay that is mottled in shades of gray, red, and brown

Important soil properties:

Permeability: moderately slow in the upper part of the subsoil and slow in the lower part
Available water capacity: moderate to high
Soil reaction: very strongly acid or strongly acid throughout except where the surface layer has been limed
Surface runoff: medium
Erosion hazard: moderate
Seasonal water table: 1.5 to 2.5 feet below the surface late in winter and early in spring
Flooding: none
Root zone: root penetration is somewhat limited in the lower part of the subsoil that is clayey and firm, sticky and plastic
Tilth: good, but the soil can be worked more easily during the drier periods

Included with this soil in mapping are small areas of Petal and Susquehanna soils that are on short, steep upland hillsides and Savannah soils on narrow upland ridges.

Most of the acreage of this Freest soil is used as woodland. A small acreage is used for row crops or pasture.

This soil is moderately suited to row crops, truck crops, and small grains. Wetness and the hazard of erosion are the main limitations. Adequate cropping systems should be used when crops are grown. Conservation tillage, contour farming, crop rotation, contour stripcropping, grassed waterways, and terraces are suitable management practices on this soil. Cultivated crops that produce large amounts of residue reduce crusting and packing and also help to control erosion.

This soil is moderately suited to grasses and legumes for hay and pasture. Overgrazing increases runoff and the hazard of erosion. Proper stocking, controlled grazing, and weed and brush control help keep the pasture and soil in good condition.

This soil is well suited to loblolly pine, slash pine, sweetgum, and shortleaf pines. Plant competition is a moderate limitation for establishing pine trees. If pines are planted, site preparation is needed to control competition from undesirable plants. Benefits of site preparation do not extend beyond one growing season. Wetness is a moderate limitation for use of equipment during wet periods. This can be avoided by scheduling management and harvesting operations during the drier periods.

This soil has good potential for use as habitat for openland and woodland wildlife. It has poor potential for use as habitat for wetland wildlife.

This soil has severe limitations for urban use. Low strength as it affects local roads and streets and high shrink-swell properties of the subsoil are severe limitations for this use. Special design and proper installation can partly overcome these limitations. The slow permeability of the clayey lower part of the subsoil is a severe limitation for use of this soil as a septic tank absorption field, but this can be partly overcome by increasing the field size.

This Freest soil is in capability subclass IIIe and in woodland suitability group 2w8.

83B—Susquehanna fine sandy loam, 2 to 5 percent slopes. This gently sloping, somewhat poorly drained soil formed in clayey marine sediment on uplands.

The typical sequence, depth, and composition of the layers of this soil are as follows:

Surface layer:
surface to 2 inches, dark gray fine sandy loam
Subsurface layer:
2 to 5 inches, light brownish gray fine sandy loam
Subsoil:
5 to 11 inches, yellowish red clay that is mottled in shades of red, brown, and gray
11 to 30 inches, clay that is mottled in shades of red, brown, and gray
30 to 60 inches, light gray clay that has reddish and brownish mottles

Important soil properties:

Permeability: very slow
Available water capacity: high
Soil reaction: very strongly acid or strongly acid throughout except where the surface layer has been limed
Surface runoff: slow or medium
Erosion hazard: moderate
Seasonal water table: more than 6 feet below the surface
Flooding: none
Root zone: root penetration is somewhat limited by the firm, sticky and plastic, clayey subsoil
Tilth: poor, the surface layer is sticky when wet and hard when dry, and it becomes cloddy if farmed when too wet or too dry. The optimum moisture content for working this soil is narrow.

Included with this soil in mapping are small areas of Freest, Malbis, and Petal soils on slightly higher elevations than Susquehanna soil.

Most of the acreage of this Susquehanna soil is used as pasture and woodland. Some small acreages are in row crops.

This soil is poorly suited to row crops, small grains, and truck crops. The hazard of erosion is the main limitation. Runoff and the hazard of erosion increase if cultivated crops are grown. Conservation tillage, terraces, grassed waterways, and cropping systems that include grasses and legumes slow runoff and help control erosion. This soil is difficult to till.

This soil is moderately suited to grasses and legumes for hay and pasture. Overgrazing increases runoff and the hazard of erosion. Proper stocking, controlled grazing, and weed and brush control help keep the pasture and soil in good condition.

This soil is moderately suited to loblolly pine and shortleaf pine (fig. 9). Plant competition is a moderate limitation for establishing pine trees. If pines are planted, site preparation is needed to control competition from undesirable plants. Benefits of site preparation do not extend beyond one growing season. Seasonal wetness and clayey textures are moderate limitations for use of equipment in woodland management and harvesting. This can be partly offset by harvesting during dry periods.

This soil has good potential for use as habitat for openland and woodland wildlife. It has very poor potential for use as habitat for wetland wildlife.

This soil has severe limitations for urban use. Low strength as it affects local roads and streets and high shrink-swell properties are severe limitations. Special design and proper installation can partly overcome these limitations. The very slow permeability of the clayey subsoil is a severe limitation for use of this soil as a septic tank absorption field, but this can be partly overcome by increasing the field size.

This Susquehanna soil is in capability subclass IVe and in woodland suitability group 3c2.

83D—Susquehanna fine sandy loam, 5 to 12 percent slopes. This sloping to strongly sloping, somewhat poorly drained soil formed in clayey sediment on uplands.

The typical sequence, depth, and composition of the layers of this soil are as follows:

Surface layer:
surface to 5 inches, dark gray fine sandy loam
Subsurface layer:
5 to 12 inches, pale brown fine sandy loam
Subsoil:
12 to 19 inches, red clay that has yellowish brown and light brownish gray mottles
19 to 64 inches, light brownish gray clay that has mottles in shades of red and brown

Important soil properties:
Permeability: very slow
Available water capacity: high
Soil reaction: very strongly acid or strongly acid throughout except where the surface layer has been limed
Surface runoff: rapid
Erosion hazard: severe
Seasonal water table: more than 6 feet below the surface
Flooding: none
Root zone: root penetration is somewhat limited by the firm, sticky and plastic, clayey subsoil
Tilth: not applicable

Included with this soil in mapping are small areas of Petal and Freest soils on slightly higher elevations than Susquehanna soil.

Most of the acreage of this Susquehanna soil is used as pasture and woodland.

This soil is poorly suited to row crops, small grains, and truck crops. Rapid runoff, steepness of slope, and the severe hazard of erosion are the main limitations.

This soil is moderately suited to grasses and legumes for hay and pasture. Overgrazing increases runoff and the hazard of erosion. Proper stocking, controlled grazing, and weed and brush control help keep the pasture and soil in good condition.

This soil is moderately suited to loblolly pine and shortleaf pine. Plant competition is a moderate limitation for establishing pine trees. If pines are planted, site preparation is needed to control competition from undesirable plants. Benefits of site preparation do not extend beyond one growing season. Seasonal wetness and clayey textures are moderate limitations for use of equipment in woodland management and harvesting. This can be partly overcome by harvesting during dry periods.

Susquehanna soil has good potential for use as habitat for openland and woodland wildlife and very poor potential for use as habitat for wetland wildlife.

This soil has severe limitations for most urban uses. High shrink-swell properties of the subsoil and steepness of slope are the main limitations. Low strength affects local roads and streets. Special design and proper installation can partly overcome these limitations. The very slow permeability of the clayey subsoil is a severe limitation for use of this soil as septic tank absorption fields. This can be partly overcome by increasing the field size.

This Susquehanna soil is in capability subclass VIe and in woodland suitability group 3c2.

90—Heidel-McLaurin association, hilly. This map unit consists of well drained McLaurin and Heidel soils in a regular and repeating pattern on ruggedly dissected, hilly uplands. The composition varies somewhat between mapped areas, but mapping has been controlled well

Figure 9.—Well managed stand of loblolly pine on Susquehanna fine sandy loam, 2 to 5 percent slopes.

enough for the expected use of the soils. McLaurin soil formed in loamy marine deposits on sloping ridgetops and upper parts of hillsides. Slopes range from 5 to 8 percent. Heidel soil formed in loamy sediment on the sloping to steep hillsides. Slopes range from 5 to 20 percent.

Heidel soil and closely similar soils make up about 43 percent of the association.

The typical sequence, depth, and composition of the layers of the Heidel soil are as follows:

Surface layer:
surface to 4 inches, dark grayish brown loamy sand
Subsurface layer:
4 to 12 inches, yellowish brown loamy sand
Subsoil:
12 to 68 inches, red sandy loam that has pockets of uncoated sand grains

Important soil properties of Heidel soil:

Permeability: moderate
Available water capacity: moderate
Soil reaction: very strongly acid or strongly acid throughout except where the surface layer has been limed
Surface runoff: rapid
Erosion hazard: severe
Seasonal water table: more than 6 feet below the surface
Flooding: none
Root zone: deep and easily penetrated by plant roots
Tilth: good, can be worked throughout a wide range of moisture content

McLaurin soil and closely similar soils make up about 37 percent of the association.

The typical sequence, depth, and composition of the layers of the McLaurin soil are as follows:

Surface layer:
surface to 3 inches, dark grayish brown fine sandy loam
Subsurface layer:
3 to 11 inches, yellowish brown fine sandy loam
Subsoil:
11 to 26 inches, yellowish red sandy loam
26 to 38 inches, yellowish red sandy loam that has light yellowish brown mottles
38 to 60 inches, red sandy loam

Important soil properties of McLaurin soil:

Permeability: moderate
Available water capacity: moderate
Soil reaction: very strongly acid or strongly acid throughout except where the surface layer has been limed
Surface runoff: medium
Erosion hazard: moderate
Seasonal water table: more than 6 feet below the surface
Flooding: none
Root zone: deep and easily penetrated by plant roots
Tilth: good, can be worked thoroughout a wide range of moisture content

Included with these soils in mapping are small areas of soils that have a thick sandy surface layer, on upland hillsides; Malbis and Susquehanna soils on lower slopes of upland hillsides; and very poorly drained, organic soils on narrow flood plains and drainageways. The included soils make up about 20 percent of the map unit.

Most of the acreage of the Heidel and McLaurin soils are used as woodland.

Heidel soil is poorly suited to row crops, small grains, and truck crops, and McLaurin soil is moderately suited to these uses. Because of the steepness of slopes, rapid runoff, and severe hazard of erosion, permanent vegetation of grasses and legumes or trees should be maintained on these soils to control erosion.

Heidel and McLaurin soils are moderately suited to grasses and legumes for hay and pasture. Overgrazing increases runoff and the hazard of erosion. Proper stocking, controlled grazing, and weed and brush control help keep the pasture and soil in good condition.

Heidel soil is well suited to loblolly pine, shortleaf pine, and slash pine. McLaurin soil is well suited to loblolly pine, longleaf pine, and slash pine. Limitations for woodland management are slight on these soils.

Heidel soil has fair potential and McLaurin soil has good potential for use as habitat for openland wildlife. These soils have good potential for use as habitat for woodland wildlife and very poor potential for use as habitat for wetland wildlife.

Heidel soil has moderate limitations for urban use, and McLaurin soil has slight limitations for this use. Steepness of slope is the main limitation. It is a severe limitation for small commercial buildings on Heidel soil and a moderate limitation on McLaurin soil. Because of steepness of slope, Heidel soil has a moderate limitation for septic tank absorption fields, and McLaurin soil has a slight limitation for this use. These limitations can be partly overcome by special design and proper installation.

Heidel soil is in capability subclass VIIe, and McLaurin soil is in capability subclass IIIe. These soils are in woodland suitability group 2o1.

131—Trebloc silt loam and Bibb fine sandy loam, occasionally and frequently flooded. This map unit consists of nearly level, poorly drained Trebloc and Bibb soils on flood plains. These soils are so intermingled that mapping them separately was not practical. Trebloc soil formed in moderately fine textured alluvium that has a moderate to high content of silt and clay, and the Bibb soil formed in stratified sandy and loamy alluvium. These soils are on flood plains on which the generally smooth surface is scarred by numerous sloughs, depressions, and overflow splays. These soils are subject to occasional and frequent flooding for brief periods during winter and early in spring. This map unit consists of about 40 percent Trebloc soil and about 30 percent Bibb soil. Slopes range from 0 to 2 percent.

The typical sequence, depth, and composition of the layers of the Trebloc soil are as follows:

Surface layer:
surface to 3 inches, dark grayish brown silt loam
Subsurface layer:
3 to 6 inches, light gray silt loam
Subsoil:
6 to 65 inches, light gray silty clay loam that has brownish yellow and yellowish brown mottles

Important soil properties of Trebloc soil:

Permeability: moderately slow
Available water capacity: high
Soil reaction: very strongly acid or strongly acid throughout except where the surface layer has been limed
Surface runoff: slow
Erosion hazard: slight
Seasonal water table: 0.5 to 1.0 foot below the surface in winter and early in spring
Flooding: higher areas are occasionally flooded, and low areas are frequently flooded for brief periods during winter and early in spring
Root zone: seasonal water table somewhat limits root penetration of plants that are not water tolerant
Tilth: good, can be worked more easily during the drier season

The typical sequence, depth, and composition of the layers of the Bibb soil are as follows:

Surface layer:
surface to 2 inches, dark grayish brown fine sandy loam
Subsurface layer:
2 to 10 inches, light gray loamy sand
Underlying material:
10 to 31 inches, gray silt loam that has mottles in shades of yellow, brown, and red
31 to 62 inches, gray fine sandy loam that has fine stratifications

Important soil properties of Bibb soil:

Permeability: moderate
Available water capacity: moderate
Soil reaction: very strongly acid or strongly acid throughout except where the surface layer has been limed
Surface runoff: slow
Erosion hazard: slight
Seasonal water table: within 0.5 foot of the surface in wet periods, mostly late in winter and early in spring
Flooding: high areas are occasionally flooded and low areas are frequently flooded for brief periods during winter and early in spring
Root zone: seasonal water table somewhat limits root penetration of plants that are not water tolerant
Tilth: good, can be worked more easily during the drier periods

Included with these soils in mapping are small areas of Harleston and Quitman soils on low terraces bordering flood plains, Jena soils on flood plains, and Stough soils on stream terraces. Also included are small areas of soils in similar positions as Trebloc soil but are browner and better drained. The included soils make up about 30 percent of the map unit.

All of the acreage of the soils in this map unit is used as woodland and is in the DeSoto National Forest.

The soils in this map unit have seasonal precautions for harvesting and regeneration. These seasonally wet soils are subject to compaction and should not be disturbed if wet. Because of the seasonal high water table and hazard of flooding, the soils of this map unit are very poor for road and log landing locations.

The preferred forest management type is sweetgum, Nuttall oak, willow oak, and laurel oak. The optional management type is slash pine, sweetgum, yellow-poplar, Nuttall oak, willow oak, and laurel oak.

The soils in this map unit are not assigned a capability subclass or a woodland suitability group.

213—Benndale fine sandy loam, undulating. This well drained soil formed in loamy marine or alluvial deposits on uplands and terraces. Well defined drainageways dissect the map unit in most places. The mapped areas mainly are irregular in shape. Slopes typically are complex and range from 0 to 8 percent.

The typical sequence, depth, and composition of the layers of this soil are as follows:

Surface layer:
surface to 2 inches, very dark grayish brown fine sandy loam
Subsurface layer:
2 to 6 inches, yellowish brown fine sandy loam
Subsoil:
6 to 12 inches, strong brown loam
12 to 65 inches or more, brownish yellow sandy loam

Important soil properties:

Permeability: moderate
Available water capacity: moderate
Soil reaction: very strongly acid or strongly acid throughout except where the surface layer has been limed
Surface runoff: medium or slow
Erosion hazard: moderate
Seasonal water table: more than 6 feet below the surface
Flooding: none
Root zone: deep and easily penetrated by plant roots
Tilth: good, can be worked throughout a wide range of moisture content

Included with this soil in mapping are small areas of Heidel and Malbis soils on uplands. Small areas of Benndale soils that have slopes of more than 12 percent are also included.

All of the acreage of this Benndale soil is used as woodland and is in the DeSoto National Forest.

This soil requires slight precautions for harvesting and regeneration. The combination of soil and slopes is such that normal logging operations and mechanical site preparation systems normally used should not adversely affect the site. Normal caution is needed to minimize concentrations of water. Because this soil is high in sand and has enough fines for a satisfactory binding effect, it is good for road and log landing locations. This stable soil has low shrink-swell potential and high bearing capacity.

The preferred management type is longleaf pine, and the optional management type is longleaf pine and slash pine.

This Benndale soil is not assigned a capability subclass or a woodland suitability group.

613—Benndale fine sandy loam, rolling. This strongly sloping, well drained soil formed in loamy marine deposits on uplands. Well defined drainageways dissect the map unit in most places. The mapped areas are mainly somewhat long and narrow. Slopes typically are complex and range from 8 to 12 percent.

The typical sequence, depth, and composition of the layers of this soil are as follows:

Surface layer:
surface to 3 inches, grayish brown fine sandy loam
Subsurface layer:
3 to 5 inches, pale brown fine sandy loam
Subsoil:
5 to 9 inches, yellowish brown loam
9 to 50 inches, strong brown loam
50 to 60 inches, yellowish brown loam that has yellowish red mottles
60 to 65 inches or more, mottled brownish yellow, yellow, and light gray loam

Important soil properties:

Permeability: moderate
Available water capacity: moderate
Soil reaction: very strongly acid or strongly acid throughout except where the surface layer has been limed
Surface runoff: rapid
Erosion hazard: severe
Seasonal water table: more than 6 feet below the surface
Flooding: none
Root zone: deep and easily penetrated by plant roots
Tilth: good, can be worked throughout a wide range of moisture content

Included with this soil in mapping are small areas of Heidel and Malbis soils on uplands. Small areas of Benndale soils that have slopes of more than 12 percent are also included.

All of the acreage of this Benndale soil is used as woodland, and is in the DeSoto National Forest.

Because of steepness of slope and the hazard of erosion, harvesting and regeneration precautions are moderate. This soil is easily eroded. To help control the hazard of erosion, road systems and skidding methods should be planned before logging operations start to minimize the soil area to be disturbed, and special precautions are needed to minimize concentrations of water. No more than 60 percent of the mineral soil should be exposed. Because the surface layer is high in fine sand, this soil is fair for road and log landing locations.

The preferred management type is longleaf pine. The optional management type is longleaf pine and slash pine.

This Benndale soil is not assigned a capability subclass or a woodland suitability group.

652—Susquehanna fine sandy loam, rolling. This strongly sloping to moderately steep, somewhat poorly drained soil formed in clayey marine sediment on uplands. Slopes range from 8 to 15 percent.

The typical sequence, depth, and composition of the layers of this soil are as follows:

Surface layer:
surface to 5 inches, very dark gray fine sandy loam
Subsurface layer:
5 to 10 inches, yellowish brown fine sandy loam
Subsoil:
10 to 28 inches, yellowish red clay that has light gray mottles
28 to 65 inches, light gray clay that has mottles in shades of brown

Important soil properties:

Permeability: very slow
Available water capacity: high
Soil reaction: very strongly acid or strongly acid throughout except where the surface layer has been limed
Surface runoff: rapid
Erosion hazard: severe
Seasonal water table: more than 6 feet below the surface
Flooding: none
Root zone: root penetration is somewhat limited by the firm, sticky and plastic, clayey subsoil
Tilth: poor. Because of steepness of slopes and the hazard of erosion, this soil should have a permanent vegetative cover of grasses and legumes or trees.

Included with this soil in mapping are small areas of Petal and Malbis soils on uplands at slightly higher elevations than Susquehanna soil.

All of the acreage of this Susquehanna soil is used as woodland and is in the DeSoto National Forest.

This soil requires seasonal precautions for harvesting and regeneration. This seasonally wet soil is subject to compaction, rutting, and erosion and should not be disturbed if wet. Because of shrinking and swelling, low bearing capacity, and susceptibility to rutting and compaction when wet, this soil is poor for road and log landing locations.

The preferred management type is slash pine. The optional management type is longleaf pine and slash pine.

This Susquehanna soil is not assigned a capability subclass or a woodland suitability group.

822—Malbis fine sandy loam, undulating. This moderately well drained soil formed in loamy marine sediment on uplands. Slopes range from 0 to 8 percent.

The typical sequence, depth, and composition of the layers of this soil are as follows:

Surface layer:
surface to 5 inches, brown fine sandy loam
Subsurface layer:
5 to 8 inches, brownish yellow fine sandy loam
Subsoil:
8 to 33 inches, yellowish brown loam
33 to 46 inches, yellowish brown loam that has a few yellowish red mottles and nodules of red plinthite
46 to 49 inches, strong brown loam that has yellowish red mottles and common nodules of red plinthite
49 to 62 inches or more, strong brown clay loam that has brownish yellow mottles and a few nodules of red plinthite

Important soil properties:

Permeability: moderate in the upper part of the subsoil and moderately slow in the lower part
Available water capacity: moderate
Soil reaction: very strongly acid or strongly acid throughout except where the surface layer has been limed
Surface runoff: medium or slow
Erosion hazard: moderate to slight
Seasonal water table: perched 2.5 to 4 feet below the surface during winter and early in spring
Flooding: none
Root zone: deep and easily penetrated by plant roots
Tilth: good, can be worked throughout a wide range of moisture content

Included with this soil in mapping are areas of Benndale soils on uplands and terraces and Susquehanna soils on uplands.

This soil requires seasonal precautions for harvesting and regeneration. This seasonally wet soil is subject to compaction and erosion if disturbed when wet. Because the surface layer is high in fine sand, this soil is fair for road and log landing locations.

The preferred management type is slash pine. The optional management type is longleaf pine and slash pine.

This Malbis soil is not assigned a capability subclass or a woodland suitability group.

842—Freest fine sandy loam, undulating. This nearly level to sloping, moderately well drained soil formed in loamy and clayey sediment on uplands. Slopes range from 0 to 8 percent slopes.

The typical sequence, depth, and composition of the layers of this soil are as follows:

Surface layer:
surface to 6 inches, grayish brown fine sandy loam
Subsurface layer:
6 to 10 inches, yellowish brown sandy loam
Subsoil:
10 to 20 inches, brownish yellow loam that has strong brown mottles
20 to 32 inches, brownish yellow loam that is mottled in shades of yellow, red, and gray
32 to 40 inches, clay that is mottled in shades of gray and brown
40 to 60 inches or more, light gray clay that has red mottles

Important soil properties:

Permeability: moderately slow in the upper part of the subsoil and slow in the lower part
Available water capacity: moderate to high
Soil reaction: very strongly acid or strongly acid throughout except where the surface layer has been limed
Surface runoff: medium or slow
Erosion hazard: moderate to slight
Seasonal water table: 1.5 to 2.5 feet below the surface late in winter and early in spring
Flooding: none
Root zone: root penetration is somewhat limited by the lower part of the subsoil that is firm, sticky and plastic, and clayey
Tilth: good, but the soil can be worked more easily during the drier periods.

Included with this soil in mapping are small areas of Malbis soils on upland ridges and hillsides.

All of the acreage of this Freest soil is used as woodland and is in the DeSoto National Forest.

This soil requires seasonal harvesting and regeneration precautions. In wet seasons, it is subject to

rutting, compaction, and erosion and should not be disturbed. This soil is fair for road and log landing locations. The surface layer is high in fine sand.

The preferred management type is slash pine. The optional management type is longleaf pine and slash pine.

This Freest soil is not assigned a capability subclass or a woodland suitability group.

843—Ruston fine sandy loam, undulating. This nearly level to gently rolling, well drained soil formed in loamy marine sediment on uplands. Slopes range from 0 to 8 percent.

The typical sequence, depth, and composition of the layers of this soil are as follows:

Surface layer:
surface to 3 inches, dark grayish brown fine sandy loam
Subsurface layer:
3 to 15 inches, light yellowish brown fine sandy loam
Subsoil:
15 to 23 inches, red sandy clay loam
23 to 33 inches, yellowish red loam
33 to 48 inches, yellowish red sandy loam that has light yellowish brown mottles
48 to 60 inches, mottled yellowish red, red, and brownish yellow sandy clay loam

Important soil properties:

Permeability: moderate
Available water capacity: moderate
Soil reaction: very strongly acid or strongly acid throughout except where the surface layer has been limed
Surface runoff: medium
Erosion hazard: moderate
Seasonal water table: more than 6 feet below the surface
Flooding: none
Root zone: deep and easily penetrated by plant roots
Tilth: good, can be worked throughout a wide range of moisture content

Included with this soil in mapping are small areas of Benndale soils on upland ridgetops and Heidel and Smithdale soils on short, steep upland hillsides.

All of the acreage of this Ruston soil is used as woodland and is in the DeSoto National Forest.

This soil requires slight precautions for harvesting and regeneration. The combination of soil and slope is such that normal logging operations and mechanical site preparation systems normally used should not adversely affect the site. Normal caution is needed to minimize concentrations of water. Because these soils are high in sand and have enough fines for a satisfactory binding effect, this soil is good for road and log landing locations. This stable soil has low shrink-swell characteristics and high bearing capacity.

The preferred management type is longleaf pine. The optional management type is longleaf pine and slash pine.

This Ruston soil is not assigned a capability subclass or a woodland suitability group.

852—Susquehanna fine sandy loam, undulating. This very gently sloping to gently rolling, somewhat poorly drained soil formed in clayey marine sediment on uplands. Slopes range from 1 to 8 percent.

The typical sequence, depth, and composition of the layers of this soil are as follows:

Surface layer:
surface to 5 inches, very dark gray fine sandy loam
Subsurface layer:
5 to 10 inches, pale brown fine sandy loam
Subsoil:
10 to 16 inches, red fine sandy loam that has pale brown mottles
16 to 34 inches, mottled light brownish gray and yellow silty clay
34 to 40 inches, light brownish gray clay that has yellow and red mottles
40 to 50 inches, light brownish gray clay that has red mottles
50 to 60 inches, light gray clay that has brownish yellow and yellowish red mottles

Important soil properties:

Permeability: very slow
Available water capacity: high
Soil reaction: very strongly acid or strongly acid throughout except where the surface layer has been limed
Surface runoff: medium or rapid
Erosion hazard: moderate to severe
Seasonal water table: more than 6 feet below the surface
Flooding: none
Root zone: root penetration is somewhat limited by the firm, sticky and plastic, clayey subsoil
Tilth: poor, the surface layer is sticky when wet and hard when dry, and it becomes cloddy if plowed when too wet or too dry. The optimum moisture content for working is narrow.

Included with this soil in mapping are small areas of Petal soils and Malbis soils on uplands at slightly higher elevations than Susquehanna soil.

All of the acreage of this Susquehanna soil is used as woodland and is in the DeSoto National Forest.

This soil requires seasonal precautions for harvesting and regeneration. Because this seasonally wet soil is

subject to compaction and erosion, it should not be disturbed if wet. Because of shrinking and swelling, low bearing capacity, and susceptibility to rutting and compaction when wet, this soil is poor for road and log landing locations.

The preferred management type is slash pine. The optional management type is longleaf pine and slash pine.

This Susquehanna soil is not assigned a capability subclass or a woodland suitability group.

Prime Farmland

In this section, prime farmland is defined and discussed, and the prime farmland soils in Jones County are listed.

Prime farmland is one of several kinds of important farmland defined by the U.S. Department of Agriculture. It is of major importance in meeting the nation's short- and long-range needs for food and fiber. The acreage of high-quality farmland is limited, and the U.S. Department of Agriculture recognizes that government at local, state, and federal levels, as well as individuals, must encourage and facilitate the wise use of our nation's prime farmland.

Prime farmland soils, as defined by the U.S. Department of Agriculture, are soils that are best suited to producing food, feed, forage, fiber, and oilseed crops. Such soils have properties that are favorable for the economic production of sustained high yields of crops. The soils need only to be treated and managed using acceptable farming methods. The moisture supply, of course, must be adequate, and the growing season has to be sufficiently long. Prime farmland soils produce the highest yields with minimal inputs of energy and economic resources. Farming these soils results in the least damage to the environment.

Prime farmland soils may presently be in use as cropland, pasture, or woodland, or they may be in other uses. They either are used for producing food or fiber or are available for these uses. Urban or built-up land, public land, and water areas cannot be considered prime farmland. Urban or built-up land is any contiguous unit of land 10 acres or more in size that is used for such purposes as housing, industrial, and commercial sites, sites for institutions or public buildings, small parks, golf courses, cemeteries, railroad yards, airports, sanitary landfills, sewage treatment plants, and water control structures. Public land is land not available for farming in national forests, national parks, military reservations, and state parks.

Prime farmland soils usually get an adequate and dependable supply of moisture from precipitation or irrigation. The temperature and growing season are favorable. The acidity or alkalinity level of the soils is acceptable. The soils have few or no rocks and are permeable to water and air. They are not excessively erodible or saturated with water for long periods and are not subject to frequent flooding during the growing season. The slope ranges mainly from 0 to 5 percent.

About 144,000 acres, or about 32 percent, of Jones County meets the soil requirements for prime farmland. Areas of prime farmland are scattered throughout the county with much of it in map units 1, 2, 3, and 5 of the general soil map. About 50,000 acres of this prime farmland is used for crops, mainly soybeans, wheat, sorghum, hay, and corn, which account for much of the county's total agricultural income each year.

A recent trend in land use in some parts of the county has been the loss of some prime farmlands to industrial and urban uses. The loss of prime farmland to other uses puts pressure on marginal land, which generally is more erodible, droughty, and difficult to cultivate and is less productive.

The map units, or soils, that make up prime farmland in Jones County are listed in table 5. The location of each map unit is shown on the detailed soil maps at the back of this publication. The extent of each unit is given in table 4. The soil qualities that affect use and management are described in the section "Detailed Soil Map Units." This list does not constitute a recommendation for a particular land use. The soils in table 5 that are shown as occasionally flooded are flooded for brief periods during winter and early in spring before crops are planted.

Use and Management of the Soils

This soil survey is an inveniory and evaluation of the soils in the survey area. It can be used to adjust land uses to the limitations and potentials of natural resources and the environment. Also, it can help avoid soil-related failures in land uses.

In preparing a soil survey, soil scientists, conservationists, engineers, and others collect extensive field data about the nature and behavior characteristics of the soils. They collect data on erosion, droughtiness, flooding, and other factors that affect various soil uses and management. Field experience and collected data on soil properties and performance are used as a basis for predicting soil behavior.

Information in this section can be used to plan the use and management of soils for crops and pasture; as woodland; as sites for buildings, sanitary facilities, highways and other transportation systems, and parks and other recreation facilities; and for wildlife habitat. It can be used to identify the potentials and limitations of each soil for specific land uses and to help prevent construction failures caused by unfavorable soil properties.

Planners and others using soil survey information can evaluate the effect of specific land uses on productivity and on the environment in all or part of the survey area. The survey can help planners to maintain or create a land use pattern that is in harmony with nature.

Contractors can use this survey to locate sources of sand and gravel, roadfill, and topsoil. They can use it to identify areas where bedrock, wetness, or very firm soil layers can cause difficulty in excavation.

Health officials, highway officials, engineers, and others may also find this survey useful. The survey can help them plan the safe disposal of wastes and locate sites for pavements, sidewalks, campgrounds, playgrounds, lawns, and trees and shrubs.

Crops and Pasture

James E. Johnson, conservation agronomist, Soil Conservation Service, helped prepare this section.

General management needed for crops and pasture is suggested in this section. The crops or pasture plants best suited to the soils, including some not commonly grown in the survey area, are identified; the system of land capability classification used by the Soil Conservation Service is explained; and the estimated yields of the main crops and hay and pasture plants are listed for each soil.

Planners of management systems for individual fields or farms should consider the detailed information given in the description of each soil under "Detailed Soil Map Units." Specific information can be obtained from the local office of the Soil Conservation Service or the Cooperative Extension Service.

More than 77,830 acres in Jones County was used for crops and pasture, according to the 1982 Census of Agriculture. Of this total, 17,290 acres was used as permanent pasture and 60,540 acres for row crops, mainly soybeans, sorghum, wheat, hay, and corn *(14)*.

Soil erosion is a major concern on about 80 percent of the cropland and pasture in Jones County. If the slope is more than 2 percent, erosion is a hazard.

Loss of the surface layer through erosion is damaging for two reasons. Productivity is reduced as the surface layer is lost and part of the subsoil is incorporated into the plow layer. Loss of the surface layer is especially damaging to soils that have a clayey subsoil, such as Susquehanna soils. Also, soil erosion on farmland results in sediment entering streams. Controlling erosion minimizes the pollution of streams by sediment and improves the quality of water for recreation and for fish and wildlife.

Erosion control provides protective surface cover, reduces runoff, and increases infiltration. A cropping system that keeps a plant cover on the soil for extended periods can hold soil erosion losses to amounts that will not reduce the productive capacity of the soils. On livestock farms, the legume and grass forage crops in the cropping systems reduce erosion on sloping land, provide nitrogen, and improve tilth for the following crop.

Minimizing tillage and leaving crop residue on the surface increase infiltration and reduce the hazards of runoff and erosion. These practices can be adapted to most soils in the county. Conservation tillage is effective in reducing erosion on sloping land and can be adapted to most soils in the county.

Terraces and diversions reduce concentrated water flows and length of slope, thus reducing runoff and erosion. Soils that have gentle, uniform slopes, such as Benndale, Freest, Malbis, McLaurin, Prentiss, Ruston, Savannah, and Susquehanna soils, are suitable for terraces.

Contouring and contour stripcropping are used to control erosion. Soils that have smooth, uniform slopes are best suited to these practices.

Information for the design of erosion control practices for each kind of soil is contained in the Technical Guide available in the local office of the Soil Conservation Service.

Soil drainage is the major management concern on some of the soils used for crops and pasture. Some soils, such as the frequently flooded, poorly drained Bibb and Trebloc soils, are so wet that the production of crops is not possible. Cahaba and Lucedale soils have good natural drainage. Small areas of soils in swales are sometimes included in areas of moderately well drained soils.

Soil fertility is low in most soils of the county. Many of the soils on uplands are very strongly acid or strongly acid. Unless the surface layer has been limed, applications of ground limestone are needed to raise the pH level sufficiently for good plant growth. Available phosphorus and potash levels are low in most of these soils. On all soils in the county, additions of lime and fertilizer should be based on the results of soil tests, on the need of the crop, and on the expected level of yields. The Cooperative Extension Service can help in determining the kinds and amounts of fertilizer and lime to apply.

Soil tilth is an important factor in the germination of seeds and in the infiltration of water into the soil. Soils that have good tilth are granular and porous.

Most of the soils used for crops in the county have a loam or fine sandy loam surface layer that is light in color and low in organic matter content. Generally, the structure of such soils is weak, and intense rainfall causes the formation of a crust on the surface. Once the crust forms, it reduces infiltration and increases runoff. Regular additions of crop residue, manure, and other organic material can improve soil tilth and structure and reduce crust formation.

Fall plowing is generally not a good practice on soils that have a silt loam surface layer because of the crust that forms during winter and spring. Generally, after fall plowing, many of the soils are nearly as dense and hard at planting time as they were before plowing. Also, about a third of the cropland consists of sloping soils that are subject to damaging erosion if they are plowed in fall.

Field crops suited to the soils and climate of the county include many that are not now commonly grown. Corn, sorghum, and soybeans are the principal row crops. Grain sorghum and similar crops can be grown if economic conditions are favorable. Ryegrass and wheat are the common close-growing crops. Some farms have areas for catfish farming. Vegetable farming is of economic importance in the county.

Latest information and suggestions for growing special crops can be obtained from the local office of the Cooperative Extension Service and the Soil Conservation Service. The data about specific soils in Jones County can be used in planning future land use patterns. Potential productive capacity in farming should be weighed against soil limitations for nonfarm development.

Yields Per Acre

The average yields per acre that can be expected of the principal crops under a high level of management are shown in table 6. In any given year, yields may be higher or lower than those indicated in the table because of variations in rainfall and other climatic factors.

The yields are based mainly on the experience and records of farmers, conservationists, and extension agents. Available yield data from nearby counties and results of field trials and demonstrations are also considered.

The management needed to obtain the indicated yields of the various crops depends on the kind of soil and the crop. Management can include drainage, erosion control, and protection from flooding; the proper planting and seeding rates; suitable high-yielding crop varieties; appropriate and timely tillage; control of weeds, plant diseases, and harmful insects; favorable soil reaction and optimum levels of nitrogen, phosphorus, potassium, and trace elements for each crop; effective use of crop residue, barnyard manure, and green manure crops; and harvesting that insures the smallest possible loss.

The estimated yields reflect the productive capacity of each soil for each of the principal crops. Yields are likely to increase as new production technology is developed. The productivity of a given soil compared with that of other soils, however, is not likely to change.

Crops other than those shown in table 6 are grown in the survey area, but estimated yields are not listed because the acreage of such crops is small. The local office of the Soil Conservation Service or of the Cooperative Extension Service can provide information about the management and productivity of the soils for those crops.

Land Capability Classification

Land capability classification shows, in a general way, the suitability of soils for use as cropland. Crops that require special management are excluded. The soils are grouped according to their limitations for field crops, the risk of damage if they are used for crops, and the way they respond to management. The criteria used in grouping the soils do not include major, and generally expensive, landforming that would change slope, depth, or other characteristics of the soils, nor do they include possible but unlikely major reclamation projects. Capability classification is not a substitute for interpretations designed to show suitability and limitations of groups of soils for woodland and for engineering purposes. Those map units that are in the

DeSoto National Forest were not assigned a capability classification.

In the capability system, soils are generally grouped at three levels: capability class, subclass, and unit. Only class and subclass are used in this survey. These levels are defined in the following paragraphs.

Capability classes, the broadest groups, are designated by Roman numerals I through VIII. The numerals indicate progressively greater limitations and narrower choices for practical use. The classes are defined as follows:

Class I soils have few limitations that restrict their use.

Class II soils have moderate limitations that reduce the choice of plants or that require moderate conservation practices.

Class III soils have severe limitations that reduce the choice of plants or that require special conservation practices, or both.

Class IV soils have very severe limitations that reduce the choice of plants or that require very careful management, or both.

Class V soils are not likely to erode, but they have other limitations, impractical to remove, that limit their use.

Class VI soils have severe limitations that make them generally unsuitable for cultivation.

Class VII soils have very severe limitations that make them unsuitable for cultivation.

Class VIII soils and miscellaneous areas have limitations that nearly preclude their use for commercial crop production. No soils in Class VIII are recognized in Jones County.

Capability subclasses are soil groups within one class. They are designated by adding a small letter, *e, w, s,* or *c,* to the class numeral, for example, IIe. The letter *e* shows that the main limitation is risk of erosion unless a close-growing plant cover is maintained; *w* shows that water in or on the soil interferes with plant growth or cultivation (in some soils the wetness can be partly corrected by artificial drainage); *s* shows that the soil is limited mainly because it is shallow, droughty, or stony; and *c*, used in only some parts of the United States, and none in Mississippi, shows that the chief limitation is climate that is very cold or very dry.

There are no subclasses in class I because the soils of this class have few limitations. The soils in class V are subject to little or no erosion, but they have other limitations that restrict their use to pasture, rangeland, woodland, wildlife habitat, or recreation. Class V contains only the subclasses indicated by *w, s,* or *c*.

The acreage of soils in each capability class and subclass is shown in table 7. The capability classification of each map unit is given in the section "Detailed Soil Map Units."

Woodland Management and Productivity

Paul W. Dillard, forester, Soil Conservation Service, helped prepare this section.

About 59 percent, or about 268,000 acres, of Jones County is commerical woodland that is made up of five major forest types *(11)*. The approximate extent of each forest type is 11 percent longleaf-slash pine forest, 25 percent loblolly-shortleaf pine, 30 percent oak-pine, 18 percent oak-hickory, and 16 percent oak-gum-cypress. Farmers and other nonindustrial private owners control about 74 percent of the woodland; forest industry, 11 percent; and public owners, 15 percent.

Good forest management should maintain or enhance soil productivity and water quality. Timber harvesting and site preparation for future tree crops have the greatest potential to adversely affect soil productivity and water quality. Poor management of these activities can cause erosion, nutrient depletion, and soil compaction. Site specific forest management prescriptions that consider topography, erosion hazard, time of year, and natural site fertility are the best way to prevent damage to soil and water resources.

A suitable secondary use for much of the woodland is grazing. The grasses, legumes, forbs, and many of the woody plants in the understory of woodland stands can be used for forage. Stocking the proper number of grazing animals for the amount of forage produced prevents damage to desirable trees. Additional information about the production of forage in woodland is contained in the section "Woodland Understory Vegetation."

Table 8 can be used by woodland owners or forest managers in planning the use of soils for wood crops. Only those soils suitable for wood crops are listed. The map units that occur in the DeSoto National Forest are not rated in this table. The table lists the ordination symbol (woodland suitability) for each soil. Soils assigned the same ordination symbol require the same general management and have about the same potential productivity.

The first part of the *ordination symbol*, a number, indicates the potential productivity of the soils for important trees. The number 1 indicates very high productivity; 2, high; 3, moderately high; 4, moderate; and 5, low. The second part of the symbol, a letter, indicates the major kind of soil limitation. The letter *w* indicates excessive water in or on the soil; *c*, clay in the upper part of the soil; *s*, sandy texture; *f*, high content of coarse fragments in the soil profile; and *r*, steep slopes. The letter *o* indicates that limitations or restrictions are insignificant.

In table 8, *slight, moderate,* and *severe* indicate the degree of the major soil limitations to be considered in management.

Ratings of the *erosion hazard* indicate the risk of loss of soil in a well-managed woodland. The risk is *slight* if

the expected soil loss is small, *moderate* if measures are needed to control erosion during logging and road construction, and *severe* if intensive management or special equipment and methods are needed to prevent excessive loss of soil.

Ratings of *equipment limitation* reflect the characteristics and conditions of the soil that restrict use of the equipment generally needed in woodland management or harvesting. A rating of *slight* indicates that use of equipment is not limited to a particular kind of equipment or time of year; *moderate* indicates a short seasonal limitation or a need for some modification in management or in equipment; and *severe* indicates a seasonal limitation, a need for special equipment or management, or a hazard in the use of equipment.

Seedling mortality ratings indicate the degree to which the soil affects the mortality of tree seedlings. Plant competition is not considered in the ratings. The ratings apply to seedlings from good stock that are properly planted during a period of sufficient rainfall. A rating of *slight* indicates that the expected mortality is less than 25 percent; *moderate*, 25 to 50 percent; and *severe*, more than 50 percent.

Ratings of *plant competition* indicate the degree to which undesirable plants are expected to invade where there are openings in the tree canopy. The invading plants compete with native plants or planted seedlings. A rating of *slight* indicates little or no competition from other plants; *moderate* indicates that plant competition is expected to hinder the development of a fully stocked stand of desirable trees; *severe* indicates that plant competition is expected to prevent the establishment of a desirable stand unless the site is intensively prepared, weeded, or otherwise managed to control undesirable plants.

The *potential productivity* of merchantable or *common trees* on a soil is expressed as a *site index*. This index is the average height, in feet, that dominant and codominant trees of a given species attain in a specified number of years. The site index applies to fully stocked, even-aged, unmanaged stands. Commonly grown trees are those that woodland managers generally favor in intermediate or improvement cuttings. They are selected on the basis of growth rate, quality, value, and marketability.

Trees to plant are those that are suited to the soils and to commercial wood production.

Woodland Understory Vegetation

David W. Sanders, grassland conservationist, Soil Conservation Service, helped prepare this section.

Understory vegetation consists of grasses, forbs, shrubs, and other plants. Some woodland, if well managed, can produce enough understory vegetation to support grazing of livestock or wildlife, or both, without damage to the trees.

The quantity and quality of understory vegetation vary with the kind of soil, the age and kind of trees in the canopy, the density of the canopy, and the depth and condition of the litter. The density of the canopy determines the amount of light that understory plants receive.

Significant changes in kinds and abundance of understory plants occur as the canopy changes, often regardless of grazing use. Forage value ratings are based on the precentage of the existing understory plant community made up of preferred and desirable plant species as they relate to livestock palatability.

Table 9 shows, for each soil suitable for woodland use, the potential for producing understory vegetation. The total production of understory vegetation includes the herbaceous plants and the leaves, twigs, and fruit of woody plants up to a height of 4-1/2 feet. It is expressed in pounds per acre of air-dry vegetation in a normal year. In a normal year, soil moisture is average during the optimum part of the growing season.

Table 9 also lists the common names of the characteristic vegetation on each soil and the percentage composition, by air-dry weight, of each kind of plant. The table shows the kind and percentage of understory plants expected under a canopy density that is most nearly typical of woodland in which the production of wood crops is highest.

Recreation

Ernest E. Dorrill, III, landscape architect, Soil Conservation Service, helped prepare this section.

In table 10, the soils of the survey area, except those that are in the DeSoto National Forest, are rated according to the limitations that affect their suitability for recreation. The ratings are based on restrictive soil features, such as wetness, slope, and texture of the surface layer. Susceptibility to flooding is considered. Not considered in the ratings, but important in evaluating a site, are the location and accessibility of the area, the size and shape of the area and its scenic quality, vegetation, access to water, potential water impoundment sites, and access to public sewerlines. The capacity of the soil to absorb septic tank effluent and the ability of the soil to support vegetation are also important. Soils subject to flooding are limited for recreational use by the duration and intensity of flooding and the season when flooding occurs. In planning recreation facilities, onsite assessment of the height, duration, intensity, and frequency of flooding is essential.

In table 10, the degree of soil limitation is expressed as slight, moderate, or severe. *Slight* means that soil properties are generally favorable and that limitations are minor and easily overcome. *Moderate* means that limitations can be overcome or alleviated by planning, design, or special maintenance. *Severe* means that soil properties are unfavorable and that limitations can be

offset only by costly soil reclamation, special design, intensive maintenance, limited use, or by a combination of these measures.

The information in table 10 can be supplemented by other information in this survey, for example, interpretations for septic tank absorption fields in table 13 and interpretations for dwellings without basements and for local roads and streets in table 12.

Camp areas require site preparation such as shaping and leveling the tent and parking areas, stabilizing roads and intensively used areas, and installing sanitary facilities and utility lines. Camp areas are subject to heavy foot traffic and some vehicular traffic. The best soils have gentle slopes and are not wet or subject to flooding during the period of use. The surface has few or no stones or boulders, absorbs rainfall readily but remains firm, and is not dusty when dry. Strong slopes and stones or boulders can greatly increase the cost of constructing campsites.

Picnic areas are subject to heavy foot traffic (fig. 10). Most vehicular traffic is confined to access roads and parking areas. The best soils for picnic areas are firm when wet, are not dusty when dry, are not subject to flooding during the period of use, and do not have slopes, stones, or boulders that increase the cost of shaping sites or of building access roads and parking areas.

Playgrounds require soils that can withstand intensive foot traffic. The best soils are almost level and are not wet or subject to flooding during the season of use. The surface is free of stones and boulders, is firm after rains, and is not dusty when dry. If grading is needed, the depth of the soil over bedrock or a hardpan should be considered.

Paths and trails for hiking and horseback riding should require little or no cutting and filling. The best soils are not wet, are firm after rains, are not dusty when dry, and are not subject to flooding more than once a year during the period of use. They have moderate slopes and few or no stones or boulders on the surface.

Golf fairways are subject to heavy foot traffic and some light vehicular traffic. Cutting or filling may be required. The best soils for use as golf fairways are firm when wet, are not dusty when dry, and are not subject to prolonged flooding during the period of use. They have moderate slopes and no stones or boulders on the surface. The suitability of the soil for tees or greens is not considered in rating the soils.

Wildlife Habitat

David R. Thomas, wildlife biologist, Soil Conservation Service, helped prepare this section.

Soils affect the kind and amount of vegetation that is available to wildlife as food and cover. They also affect the construction of water impoundments. The kind and abundance of wildlife depend largely on the amount and distribution of food, cover, and water. Wildlife habitat can be created or improved by planting appropriate vegetation, by maintaining the existing plant cover, or by promoting the natural establishment of desirable plants.

In table 11, the soils in the survey area, except for those map units that occur in the DeSoto National Forest, are rated according to their potential for providing habitat for various kinds of wildlife. This information can be used in planning parks, wildlife refuges, nature study areas, and other developments for wildlife; in selecting soils that are suitable for establishing, improving, or maintaining specific elements of wildlife habitat; and in determining the intensity of management needed for each element of the habitat.

The potential of the soil is rated good, fair, poor, or very poor. A rating of *good* indicates that the element or kind of habitat is easily established, improved, or maintained. Few or no limitations affect management, and satisfactory results can be expected. A rating of *fair* indicates that the element or kind of habitat can be established, improved, or maintained in most places. Moderately intensive management is required for satisfactory results. A rating of *poor* indicates that limitations are severe for the designated element or kind of habitat. Habitat can be created, improved, or maintained in most places, but management is difficult and must be intensive. A rating of *very poor* indicates that restrictions for the element or kind of habitat are very severe and that unsatisfactory results can be expected. Creating, improving, or maintaining habitat is impractical or impossible.

The elements of wildlife habitat are described in the following paragraphs.

Grain and seed crops are domestic grains and seed-producing herbaceous plants. Soil properties and features that affect the growth of grain and seed crops are depth of the root zone, texture of the surface layer, available water capacity, wetness, slope, surface stoniness, and flood hazard. Soil temperature and soil moisture are also considerations. Examples of grain and seed crops are corn, grain sorghum, millet, sunflowers, ryegrass, wheat, and oats.

Grasses and legumes are domestic perennial grasses and herbaceous legumes. Soil properties and features that affect the growth of grasses and legumes are depth of the root zone, texture of the surface layer, available water capacity, wetness, surface stoniness, flood hazard, and slope. Soil temperature and soil moisture are also considerations. Examples of grasses and legumes are annual and bush lespedezas, vetch, fescue, clover, and bahiagrass.

Wild herbaceous plants are native or naturally established grasses and forbs, including weeds. Soil properties and features that affect the growth of these plants are depth of the root zone, texture of the surface layer, available water capacity, wetness, surface stoniness, and flood hazard. Soil temperature and soil

Figure 10.—Picnic area on Savannah loam, 0 to 2 percent slopes. This soil is generally wet during winter and early in spring because of the high water table.

moisture are also considerations. Examples of wild herbaceous plants are bluestem, goldenrod, beggarweed, wooly croton, blackberry, greenbrier, and switchcane.

Hardwood trees and woody understory produce nuts or other fruit, buds, catkins, twigs, bark, and foliage. Soil properties and features that affect the growth of hardwood trees and shrubs are depth of the root zone, the available water capacity, and wetness. Examples of these plants are oaks, poplar, cherry, sweetgum, hawthorns, dogwoods, hickories, mulberry, and persimmon. Examples of fruit-producing shrubs that are suitable for planting on soils rated *good* are Russian-olive, autumn-olive, and crabapple.

Coniferous plants furnish browse and seeds. Soil properties and features that affect the growth of coniferous trees, shrubs, and ground cover are depth of the root zone, available water capacity, and wetness. Examples of coniferous plants are pine and cedar.

Shrubs are bushy woody plants that produce fruit, buds, twigs, bark, and foliage. Soil properties and features that affect the growth of shrubs are depth of the root zone, available water capacity, salinity, and soil moisture. Examples of shrubs are huckleberry, strawberry bush, and sumac.

Wetland plants are annual and perennial, wild herbaceous plants that grow on moist or wet sites. Submerged or floating aquatic plants are excluded. Soil properties and features affecting wetland plants are texture of the surface layer, wetness, reaction, salinity, slope, and surface stoniness. Examples of wetland plants are smartweed, wild millet, wildrice, rushes, sedges, and reeds.

Shallow water areas have an average depth of less than 5 feet. Some are naturally wet areas. Others are created by dams, levees, or other water-control structures. Soil properties and features affecting shallow water areas are depth to bedrock, wetness, surface stoniness, slope, and permeability. Examples of shallow water areas are beaver ponds, marshes, waterfowl feeding areas, and ponds.

The habitat in Jones County for various kinds of wildlife is described in the following paragraphs.

Habitat for openland wildlife consists of cropland, grassland, and areas that are overgrown with grasses, herbs, shrubs, and vines. These areas, including both native and introduced plants, produce grain and seed crops, grasses and legumes, and wild herbaceous plants. The wildlife attracted to these areas include bobwhite quail, dove, meadowlark, field sparrow, hawk, cottontail and swamp rabbit, fox, coyote, and rodents.

Habitat for woodland wildlife consists of areas of deciduous plants (hardwoods) or coniferous plants or both and associated grasses, legumes, and wild herbaceous plants. Wildlife attracted to these areas include tortoise (fig. 11), wild turkey, owls, woodcock, bobcats, woodpeckers, squirrels, raccoon, opossum, whitetail deer, and numerous songbirds.

Figure 11.—The gopher tortoise, a rare and endangered species, prefers to den in well drained, loamy soils, such as Heidel-McLaurin association, hilly.

Habitat for wetland wildlife consists of open, marshy or swampy shallow water areas. Some of the wildlife attracted to such areas are fish, ducks, geese, herons, shore birds, muskrat, otter, mink, beaver, raccoon, alligator, turtles, and crawfish.

Engineering

Danny K. Nelson, project engineer, Soil Conservation Service, helped prepare this section.

This section provides information for planning land uses related to urban development and to water

management. Soils are rated for various uses, and the most limiting features are identified. The ratings are given in the following tables: Building site development, Sanitary facilities, Construction materials, and Water management. The ratings are based on observed performance of the soils and on the estimated data and test data in the "Soil Properties" section.

Information in this section is intended for land use planning, for evaluating land use alternatives, and for planning site investigations prior to design and construction. The information, however, has limitations. For example, estimates and other data generally apply only to that part of the soil within a depth of 5 or 6 feet. Because of the map scale, small areas of different soils may be included within the mapped areas of a specific soil.

The information is not site specific and does not eliminate the need for onsite investigation of the soils or for testing and analysis by personnel experienced in the design and construction of engineering works.

Government ordinances and regulations that restrict certain land uses or impose specific design criteria were not considered in preparing the information in this section. Local ordinances and regulations must be considered in planning, in site selection, and in design.

Soil properties, site features, and observed performance were considered in determining the ratings in this section. During the fieldwork for this soil survey, determinations were made about grain-size distribution, liquid limit, plasticity index, soil reaction, depth to bedrock, hardness of bedrock within 5 to 6 feet of the surface, soil wetness, depth to a seasonal high water table, slope, likelihood of flooding, natural soil structure aggregation, and soil density. Data were collected about kinds of clay minerals, mineralogy of the sand and silt fractions, and the kind of adsorbed cations. Estimates were made for erodibility, permeability, corrosivity, shrink-swell potential, available water capacity, and other behavioral characteristics affecting engineering uses.

This information can be used to: evaluate the potential of areas for residential, commercial, industrial, and recreational uses; make preliminary estimates of construction conditions; evaluate alternative routes for roads, streets, highways, pipelines, and underground cables; evaluate alternative sites for sanitary landfills, septic tank absorption fields, and sewage lagoons; plan detailed onsite investigations of soils and geology; locate potential sources of gravel, sand, earthfill, and topsoil; plan drainage systems, irrigation systems, ponds, terraces, and other structures for soil and water conservation; and predict performance of proposed small structures and pavements by comparing the performance of existing similar structures on the same or similar soils.

The information in the tables, along with the soil maps, the soil descriptions, and other data provided in this survey can be used to make additional interpretations.

Some of the terms used in this soil survey have a special meaning in soil science and are defined in the Glossary.

Building Site Development

Table 12 shows the degree and kind of soil limitations that affect shallow excavations, dwellings with and without basements, small commercial buildings, local roads and streets, and lawns and landscaping. The soils in the DeSoto National Forest are not rated for building site development. The limitations are considered *slight* if soil properties and site features are generally favorable for the indicated use and limitations are minor and easily overcome; *moderate* if soil properties or site features are not favorable for the indicated use and special planning, design, or maintenance is needed to overcome or minimize the limitations; and *severe* if soil properties or site features are so unfavorable or so difficult to overcome that special design, significant increases in construction costs, and possibly increased maintenance are required. Special feasibility studies may be required where the soil limitations are severe.

Shallow excavations are trenches or holes dug to a maximum depth of 5 or 6 feet for basements, graves, utility lines, open ditches, and other purposes. The ratings are based on soil properties, site features, and observed performance of the soils. The ease of digging, filling, and compacting is affected by the depth to bedrock, a cemented pan, or a very firm dense layer; stone content; soil texture; and slope. The time of the year that excavations can be made is affected by the depth to a seasonal high water table and the susceptibility of the soil to flooding. The resistance of the excavation walls or banks to sloughing or caving is affected by soil texture and the depth to the water table.

Dwellings and small commercial buildings are structures built on shallow foundations on undisturbed soil. The load limit is the same as that for single-family dwellings no higher than three stories. Ratings are made for small commercial buildings without basements, for dwellings with basements, and for dwellings without basements. The ratings are based on soil properties, site features, and observed performance of the soils. A high water table, flooding, shrink-swell potential, and organic layers can cause the movement of footings. A high water table, depth to bedrock or to a cemented pan, large stones, and flooding affect the ease of excavation and construction. Landscaping and grading that require cuts and fills of more than 5 to 6 feet are not considered.

Local roads and streets have an all-weather surface and carry automobile and light truck traffic all year. They have a subgrade of cut or fill soil material, a base of gravel, crushed rock, or stabilized soil material, and a flexible or rigid surface. Cuts and fills are generally limited to less than 6 feet. The ratings are based on soil properties, site features, and observed performance of

the soils. Depth to bedrock or to a cemented pan, a high water table, flooding, large stones, and slope affect the ease of excavating and grading. Soil strength (as inferred from the engineering classification of the soil), shrink-swell potential, frost-action potential, and depth to a high water table affect the traffic-supporting capacity.

Lawns and landscaping require soils on which turf and ornamental trees and shrubs can be established and maintained. The ratings are based on soil properties, site features, and observed performance of the soils. Soil reaction, a high water table, depth to bedrock or to a cemented pan, the available water capacity in the upper 40 inches, and the content of salts, sodium, and sulfidic materials affect plant growth. Flooding, wetness, slope, stoniness, and the amount of sand, clay, or organic matter in the surface layer affect trafficability after vegetation is established.

Sanitary Facilities

Table 13 shows the degree and the kind of soil limitations that affect septic tank absorption fields, sewage lagoons, and sanitary landfills. The soils that occur in the DeSoto National Forest are not rated for sanitary facilities. The limitations are considered *slight* if soil properties and site features are generally favorable for the indicated use and limitations are minor and easily overcome; *moderate* if soil properties or site features are not favorable for the indicated use and special planning, design, or maintenance is needed to overcome or minimize the limitations; and *severe* if soil properties or site features are so unfavorable or so difficult to overcome that special design, significant increases in construction costs, and possibly increased maintenance are required.

Table 13 also shows the suitability of the soils for use as daily cover for landfills. A rating of *good* indicates that soil properties and site features are favorable for the use and that good performance and low maintenance can be expected; *fair* indicates that soil properties and site features are moderately favorable for the use and one or more soil properties or site features make the soil less desirable than the soils rated good; and *poor* indicates that one or more soil properties or site features are unfavorable for the use and overcoming the unfavorable properties requires special design, extra maintenance, or costly alteration.

Septic tank absorption fields are areas in which effluent from a septic tank is distributed into the soil through subsurface tiles or perforated pipe. Only that part of the soil between depths of 24 and 72 inches is evaluated. The ratings are based on soil properties, site features, and observed performance of the soils. Permeability, a high water table, depth to bedrock or to a cemented pan, and flooding affect absorption of the effluent. Large stones and bedrock or a cemented pan interfere with installation.

Unsatisfactory performance of septic tank absorption fields, including excessively slow absorption of effluent, surfacing of effluent, and hillside seepage, can affect public health. Ground water can be polluted if highly permeable sand and gravel or fractured bedrock is less than 4 feet below the base of the absorption field, if slope is excessive, or if the water table is near the surface. There must be unsaturated soil material beneath the absorption field to filter the effluent effectively. Many local ordinances require that this material be of a certain thickness.

Sewage lagoons are shallow ponds constructed to hold sewage while aerobic bacteria decompose the solid and liquid wastes. Lagoons should have a nearly level floor surrounded by cut slopes or embankments of compacted soil. Lagoons generally are designed to hold the sewage within a depth of 2 to 5 feet. Nearly impervious soil material for the lagoon floor and sides is required to minimize seepage and contamination of ground water.

Table 13 gives ratings for the natural soil that makes up the lagoon floor. The surface layer and, generally, 1 or 2 feet of soil material below the surface layer are excavated to provide material for the embankments. The ratings are based on soil properties, site features, and observed performance of the soils. Considered in the ratings are slope, permeability, a high water table, flooding, and content of organic matter.

Excessive seepage due to rapid permeability of the soil or a water table that is high enough to raise the level of sewage in the lagoon causes a lagoon to function unsatisfactorily. Pollution results if seepage is excessive or if floodwater overtops the lagoon. A high content of organic matter is detrimental to proper functioning of the lagoon because it inhibits aerobic activity. Slope can cause construction problems.

Sanitary landfills are areas where solid waste is disposed of by burying it in soil. There are two types of landfill—trench and area. In a trench landfill, the waste is placed in a trench. It is spread, compacted, and covered daily with a thin layer of soil excavated at the site. In an area landfill, the waste is placed in successive layers on the surface of the soil. The waste is spread, compacted, and covered daily with a thin layer of soil from a source away from the site.

Both types of landfill must be able to bear heavy vehicular traffic. Both types involve a risk of ground water pollution. Ease of excavation and revegetation needs to be considered.

The ratings in table 13 are based on soil properties, site features, and observed performance of the soils. Permeability, depth to bedrock or to a cemented pan, a high water table, slope, and flooding affect both types of landfill. Texture, stones and boulders, highly organic layers, soil reaction, and content of salts and sodium affect trench type landfills. Unless otherwise stated, the ratings apply only to that part of the soil within a depth

of about 6 feet. For deeper trenches, a limitation rated slight or moderate may not be valid. Onsite investigation is needed.

Daily cover for landfill is the soil material that is used to cover compacted solid waste in an area type sanitary landfill. The soil material is obtained offsite, transported to the landfill, and spread over the waste.

Soil texture, wetness, coarse fragments, and slope affect the ease of removing and spreading the material during wet and dry periods. Loamy or silty soils that are free of large stones or excess gravel are the best cover for a landfill. Clayey soils are sticky or cloddy and are difficult to spread.

After soil material has been removed, the soil material remaining in the borrow area must be thick enough over the water table to permit revegetation. The soil material used as final cover for a landfill should be suitable for plants. The surface layer generally has the best workability, more organic matter, and the best potential for plants. Material from the surface layer should be stockpiled for use as the final cover.

Construction Materials

Table 14 gives information about the soils as a source of roadfill, sand, gravel, and topsoil. The soils are rated *good, fair,* or *poor* as a source of roadfill and topsoil. They are rated as a probable or improbable source of sand and gravel. The ratings are based on soil properties and site features that affect the removal of the soil and its use as construction material. Normal compaction, minor processing, and other standard construction practices are assumed. Each soil is evaluated to a depth of 5 or 6 feet.

Roadfill is soil material that is excavated in one place and used in road embankments in another place. In this table, the soils are rated as a source of roadfill for low embankments, generally less than 6 feet high and less exacting in design than higher embankments.

The ratings are for the soil material below the surface layer to a depth of 5 or 6 feet. It is assumed that soil layers will be mixed during excavating and spreading. Many soils have layers of contrasting suitability within their profile. The table showing engineering index properties provides detailed information about each soil layer. This information can help determine the suitability of each layer for use as roadfill. The performance of soil after it is stabilized with lime or cement is not considered in the ratings.

The ratings are based on soil properties, site features, and observed performance of the soils. The thickness of suitable material is a major consideration. The ease of excavation is affected by large stones, a high water table, and slope. How well the soil performs in place after it has been compacted and drained is determined by its strength (as inferred from the engineering classification of the soil) and shrink-swell potential.

Soils rated *good* contain significant amounts of sand or gravel or both. They have at least 5 feet of suitable material, low shrink-swell potential, few cobbles and stones, and slopes of 15 percent or less. Depth to the water table is more than 3 feet. Soils rated *fair* are more than 35 percent silt- and clay-sized particles and have a plasticity index of less than 10. They have moderate shrink-swell potential, slopes of 15 to 25 percent, or many stones. Depth to the water table is 1 to 3 feet. Soils rated *poor* have a plasticity index of more than 10, a high shrink-swell potential, many stones, or slopes of more than 25 percent. They are wet, and the depth to the water table is less than 1 foot. They may have layers of suitable material, but the material is less than 3 feet thick.

Sand and gravel are natural aggregates suitable for commercial use with a minimum of processing. Sand and gravel are used in many kinds of construction. Specifications for each use vary widely. In table 14, only the probability of finding material in suitable quantity is evaluated. The suitability of the material for specific purposes is not evaluated, nor are factors that affect excavation of the material.

The properties used to evaluate the soil as a source of sand or gravel are gradation of grain sizes (as indicated by the engineering classification of the soil), the thickness of suitable material, and the content of rock fragments. Kinds of rock, acidity, and stratification are given in the soil series descriptions. Gradation of grain sizes is given in the table on engineering index properties.

A soil rated as a probable source has a layer of clean sand or gravel or a layer of sand or gravel that is up to 12 percent silty fines. This material must be at least 3 feet thick and less than 50 percent, by weight, large stones. All other soils are rated as an improbable source. Coarse fragments of soft bedrock, such as shale and siltstone, are not considered to be sand and gravel.

Topsoil is used to cover an area so that vegetation can be established and maintained. The upper 40 inches of a soil is evaluated for use as topsoil. Also evaluated is the reclamation potential of the borrow area.

Plant growth is affected by toxic material and by such properties as soil reaction, available water capacity, and fertility. The ease of excavating, loading, and spreading is affected by rock fragments, slope, a water table, soil texture, and thickness of suitable material. Reclamation of the borrow area is affected by slope, a water table, rock fragments, bedrock, and toxic material.

Soils rated *good* have friable, loamy material to a depth of at least 40 inches. They are free of stones and cobbles, have little or no gravel, and have slopes of less than 8 percent. They are low in content of soluble salts, are naturally fertile or respond well to fertilizer, and are not so wet that excavation is difficult.

Soils rated *fair* are sandy soils, loamy soils that have a relatively high content of clay, soils that have only 20 to

40 inches of suitable material, soils that have an appreciable amount of gravel, stones, or soluble salts, or soils that have slopes of 8 to 15 percent. The soils are not so wet that excavation is difficult.

Soils rated *poor* are very sandy or clayey, have less than 20 inches of suitable material, have a large amount of gravel, stones, or soluble salts, have slopes of more than 15 percent, or have a seasonal water table at or near the surface.

The surface layer of most soils is generally preferred for topsoil because of its organic matter content. Organic matter greatly increases the absorption and retention of moisture and nutrients for plant growth.

Water Management

Table 15 gives information on the soil properties and site features that affect water management. The degree and kind of soil limitations are given for pond reservoir areas; embankments, dikes, and levees; and aquifer-fed ponds. The limitations are considered *slight* if soil properties and site features are generally favorable for the indicated use and limitations are minor and are easily overcome; *moderate* if soil properties or site features are not favorable for the indicated use and special planning, design, or maintenance is needed to overcome or minimize the limitations; and *severe* if soil properties or site features are so unfavorable or so difficult to overcome that special design, significant increase in construction costs, and possibly increased maintenance are required.

This table also gives the restrictive features that affect each soil for drainage, irrigation, terraces and diversions, and grassed waterways.

Pond reservoir areas hold water behind a dam or embankment. Soils best suited to this use have low seepage potential in the upper 60 inches. The seepage potential is determined by the permeability of the soil and the depth to fractured bedrock or other permeable material. Excessive slope can affect the storage capacity of the reservoir area.

Embankments, dikes, and levees are raised structures of soil material, generally less than 20 feet high, constructed to impound water or to protect land against overflow. In this table, the soils are rated as a source of material for embankment fill. The ratings apply to the soil material below the surface layer to a depth of about 5 feet. It is assumed that soil layers will be uniformly mixed and compacted during construction.

The ratings do not indicate the ability of the natural soil to support an embankment. Soil properties to a depth greater than the height of the embankment can affect performance and safety of the embankment. Generally, deeper onsite investigation is needed to determine these properties.

Soil material in embankments must be resistant to seepage, piping, and erosion and have favorable compaction characteristics. Unfavorable features include less than 5 feet of suitable material and a high content of stones or boulders, organic matter, or salts or sodium. A high water table affects the amount of usable material. It also affects trafficability.

Aquifer-fed excavated ponds are pits or dugouts that extend to a ground-water aquifer or to a depth below a permanent water table. Excluded are ponds that are fed only by surface runoff and embankment ponds that impound water 3 feet or more above the original surface. Excavated ponds are affected by depth to a permanent water table, permeability of the aquifer, and the salinity of the soil. Depth to bedrock and the content of large stones affect the ease of excavation.

Drainage is the removal of excess surface and subsurface water from the soil. How easily and effectively the soil is drained depends on the depth to bedrock, to a cemented pan, or to other layers that affect the rate of water movement; permeability; depth to a high water table or depth of standing water if the soil is subject to ponding; slope; susceptibility to flooding; subsidence of organic layers; and potential frost action. Excavating and grading and the stability of ditchbanks are affected by depth to bedrock or to a cemented pan, large stones, slope, and the hazard of cutbanks caving. The productivity of the soil after drainage is adversely affected by extreme acidity or by toxic substances in the root zone, such as salts, sodium, or sulfur. Availability of drainage outlets is not considered in the ratings.

Terraces and diversions are embankments or a combination of channels and ridges constructed across a slope to reduce erosion and conserve moisture by intercepting runoff. Slope, wetness, large stones, and depth to bedrock or to a cemented pan affect the construction of terraces and diversions. A restricted rooting depth, a severe hazard of wind or water erosion, an excessively coarse texture, and restricted permeability adversely affect maintenance.

Grassed waterways are natural or constructed channels, generally broad and shallow, that conduct surface water to outlets at a nonerosive velocity. Large stones, wetness, slope, and depth to bedrock or to a cemented pan affect the construction of grassed waterways. A hazard of wind erosion, low available water capacity, restricted rooting depth, toxic substances such as salts or sodium, and restricted permeability adversely affect the growth and maintenance of the grass after construction.

Soil Properties

Data relating to soil properties are collected during the course of the soil survey. The data and the estimates of soil and water features, listed in tables, are explained on the following pages.

Soil properties are determined by field examination of the soils and by laboratory index testing of some benchmark soils. Established standard procedures are followed. During the survey, many shallow borings are made and examined to identify and classify the soils and to delineate them on the soil maps. Samples are taken from some typical profiles and tested in the laboratory to determine grain-size distribution, plasticity, and compaction characteristics.

Estimates of soil properties are based on field examinations, on laboratory tests of samples from the survey area, and on laboratory tests of samples of similar soils in nearby areas. Tests verify field observations, verify properties that cannot be estimated accurately by field observation, and help characterize key soils.

The estimates of soil properties shown in the tables include the range of grain-size distribution and Atterberg limits, the engineering classifications, and the physical and chemical properties of the major layers of each soil. Pertinent soil and water features also are given.

Engineering Index Properties

Table 16 gives estimates of the engineering classification and of the range of index properties for the major layers of each soil in the survey area. Most soils have layers of contrasting properties within the upper 5 or 6 feet.

Depth to the upper and lower boundaries of each layer is indicated. The range in depth and information on other properties of each layer are given for each soil series under "Soil Series and Their Morphology."

Texture is given in the standard terms used by the U.S. Department of Agriculture. These terms are defined according to percentages of sand, silt, and clay in the fraction of the soil that is less than 2 millimeters in diameter. "Loam," for example, is soil that is 7 to 27 percent clay, 28 to 50 percent silt, and less than 52 percent sand. If the content of particles coarser than sand is as much as 15 percent, an appropriate modifier is added, for example, "gravelly." Textural terms are defined in the Glossary.

Classification of the soils is determined according to the Unified soil classification system *(2)* and the system adopted by the American Association of State Highway and Transportation Officials *(1)*.

The Unified system classifies soils according to properties that affect their use as construction material. Soils are classified according to grain-size distribution of the fraction less than 3 inches in diameter and according to plasticity index, liquid limit, and organic matter content. Sandy and gravelly soils are identified as GW, GP, GM, GC, SW, SP, SM, and SC; silty and clayey soils as ML, CL, OL, MH, CH, and OH; and highly organic soils as PT. Soils exhibiting engineering properties of two groups can have a dual classification, for example, SP-SM.

The AASHTO system classifies soils according to those properties that affect roadway construction and maintenance. In this system, the fraction of a mineral soil that is less than 3 inches in diameter is classified in one of seven groups from A-1 through A-7 on the basis of grain-size distribution, liquid limit, and plasticity index. Soils in group A-1 are coarse grained and low in content of fines (silt and clay). At the other extreme, soils in group A-7 are fine grained. Highly organic soils are classified in group A-8 on the basis of visual inspection.

If laboratory data are available, the A-1, A-2, and A-7 groups are further classified as A-1-a, A-1-b, A-2-4, A-2-5, A-2-6, A-2-7, A-7-5, or A-7-6. As an additional refinement, the suitability of a soil as subgrade material can be indicated by a group index number. Group index numbers range from 0 for the best subgrade material to 20, or higher, for the poorest.

Percentage (of soil particles) passing designated sieves is the percentage of the soil fraction less than 3 inches in diameter based on an ovendry weight. The sieves, numbers 4, 10, 40, and 200 (USA Standard Series), have openings of 4.76, 2.00, 0.420, and 0.074 millimeters, respectively. Estimates are based on laboratory tests of soils sampled in the survey area and in nearby areas and on estimates made in the field.

Liquid limit and *plasticity index* (Atterberg limits) indicate the plasticity characteristics of a soil. The estimates are based on test data from the survey area, or from nearby areas, and on field examination.

The estimates of grain-size distribution, liquid limit, and plasticity index are rounded to the nearest 5 percent. Thus, if the ranges of gradation and Atterberg limits

extend a marginal amount (1 or 2 percentage points) across classification boundaries, the classification in the marginal zone is omitted in the table.

Physical and Chemical Properties

Table 17 shows estimates of some characteristics and features that affect soil behavior. These estimates are given for the major layers of each soil in the survey area. The estimates are based on field observations and on test data for these and similar soils.

Clay as a soil separate, or component, consists of mineral soil particles that are less than 0.002 millimeter in diameter. In this table, the estimated clay content of each major soil layer is given as a percentage, by weight, of the soil material that is less than 2 millimeters in diameter.

The amount and kind of clay greatly affect the fertility and physical condition of the soil. They determine the ability of the soil to adsorb cations and to retain moisture. They influence shrink-swell potential, permeability, plasticity, the ease of soil dispersion, and other soil properties. The amount and kind of clay in a soil also affect tillage and earthmoving operations.

Moist bulk density is the weight of soil (ovendry) per unit volume. Volume is measured when the soil is at field moisture capacity, that is, the moisture content at 1/3 bar moisture tension. Weight is determined after drying the soil at 105 degrees C. In this table, the estimated moist bulk density of each major soil horizon is expressed in grams per cubic centimeter of soil material that is less than 2 millimeters in diameter. Bulk density data are used to compute shrink-swell potential, available water capacity, total pore space, and other soil properties. The moist bulk density of a soil indicates the pore space available for water and roots. A bulk density of more than 1.6 can restrict water storage and root penetration. Moist bulk density is influenced by texture, kind of clay, content of organic matter, and soil structure.

Permeability refers to the ability of a soil to transmit water or air. The estimates indicate the rate of downward movement of water when the soil is saturated. They are based on soil characteristics observed in the field, particularly structure, porosity, and texture. Permeability is considered in the design of soil drainage systems, septic tank absorption fields, and construction where the rate of water movement under saturated conditions affects behavior.

Available water capacity refers to the quantity of water that the soil is capable of storing for use by plants. The capacity for water storage in each major soil layer is stated in inches of water per inch of soil. The capacity varies, depending on soil properties that affect the retention of water and the depth of the root zone. The most important properties are the content of organic matter, soil texture, bulk density, and soil structure. Available water capacity is an important factor in the choice of plants or crops to be grown and in the design and management of irrigation systems. Available water capacity is not an estimate of the quantity of water actually available to plants at any given time.

Soil reaction is a measure of acidity or alkalinity and is expressed as a range in pH values. The range in pH of each major horizon is based on many field tests. For many soils, values have been verified by laboratory analyses. Soil reaction is important in selecting crops and other plants, in evaluating soil amendments for fertility and stabilization, and in determining the risk of corrosion.

Shrink-swell potential is the potential for volume change in a soil with a loss or gain in moisture. Volume change occurs mainly because of the interaction of clay minerals with water and varies with the amount and type of clay minerals in the soil. The size of the load on the soil and the magnitude of the change in soil moisture content influence the amount of swelling of soils in place. Laboratory measurements of swelling of undisturbed clods were made for many soils. For others, swelling was estimated on the basis of the kind and amount of clay minerals in the soil and on measurements of similar soils.

If the shrink-swell potential is rated moderate to very high, shrinking and swelling can cause damage to buildings, roads, and other structures. Special design is often needed.

Shrink-swell potential classes are based on the change in length of an unconfined clod as moisture content is increased from air-dry to field capacity. The change is based on the soil fraction less than 2 millimeters in diameter. The classes are *low*, a change of less than 3 percent; *moderate*, 3 to 6 percent; and *high*, more than 6 percent. *Very high*, greater than 9 percent, is sometimes used.

Erosion factor K indicates the susceptibility of a soil to sheet and rill erosion by water. Factor K is one of six factors used in the Universal Soil Loss Equation (USLE) to predict the average annual rate of soil loss by sheet and rill erosion. Losses are expressed in tons per acre per year. These estimates are based primarily on percentage of silt, sand, and organic matter (up to 4 percent) and on soil structure and permeability. Values of K range from 0.02 to 0.69. The higher the value, the more susceptible the soil is to sheet and rill erosion by water.

Erosion factor T is an estimate of the maximum average annual rate of soil erosion by wind or water that can occur over a sustained period without affecting crop productivity. The rate is expressed in tons per acre per year.

Organic matter is the plant and animal residue in the soil at various stages of decomposition.

In table 17, the estimated content of organic matter is expressed as a percentage, by weight, of the soil material that is less than 2 millimeters in diameter.

The content of organic matter of a soil can be maintained or increased by returning crop residue to the soil. Organic matter affects the available water capacity, infiltration rate, and tilth. It is a source of nitrogen and other nutrients for crops.

Soil and Water Features

Table 18 gives estimates of various soil and water features. The estimates are used in land use planning that involves engineering considerations.

Hydrologic soil groups are used to estimate runoff from precipitation. Soils are assigned to one of four groups. They are grouped according to the intake of water when the soils are thoroughly wet and receive precipitation from long-duration storms.

The four hydrologic soil groups are:

Group A. Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These consist mainly of deep, well drained to excessively drained sands or gravelly sands. These soils have a high rate of water transmission.

Group B. Soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well drained or well drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission.

Group C. Soils having a slow infiltration rate when thoroughly wet. These consist chiefly of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. These soils have a slow rate of water transmission.

Group D. Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clays that have high shrink-swell potential, soils that have a permanent high water table, soils that have a claypan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission.

Flooding, the temporary covering of the soil surface by flowing water, is caused by overflowing streams, by runoff from adjacent slopes, or by inflow from high tides. Shallow water standing or flowing for short periods after rainfall or snowmelt is not considered flooding. Standing water in swamps and marshes or in a closed depression is considered ponding.

Table 18 gives the frequency and duration of flooding and the time of year when flooding is most likely to occur.

Frequency, duration, and probable dates of occurrence are estimated. Frequency generally is expressed as *none, rare, occasional,* or *frequent. None* means that flooding is not probable. *Rare* means that flooding is unlikely but possible under unusual weather conditions (there is a near 0 to 5 percent chance of flooding in any year). *Occasional* means that flooding occurs infrequently under normal weather conditions (there is a 5 to 50 percent chance of flooding in any year). *Frequent* means that flooding occurs often under normal weather conditions (there is more than a 50 percent chance of flooding in any year). *common* is used when classification as occasional or frequent does not affect interpretations. Duration is expressed as *very brief* (less than 2 days), *brief* (2 to 7 days), *long* (7 days to 1 month), and *very long* (more than 1 month). The time of year that floods are most likely to occur is expressed in months. November-May, for example, means that flooding can occur during the period November through May. About two-thirds to three-fourths of all flooding occurs during the stated period.

The information on flooding is based on evidence in the soil profile, namely, thin strata of gravel, sand, silt, or clay deposited by floodwater; irregular decrease in organic matter content with increasing depth; and absence of distinctive horizons, which are characteristic of soils that are not subject to flooding.

Also considered are local information about the extent and levels of flooding and the relation of each soil on the landscape to historic floods. Information on the extent of flooding based on soil data is less specific than that provided by detailed engineering surveys that delineate flood-prone areas at specific flood frequency levels.

High water table (seasonal) is the highest level of a saturated zone in the soil in most years. The depth to a seasonal high water table applies to undrained soils. The estimates are based mainly on the evidence of a saturated zone, namely grayish colors or mottles in the soil. Indicated in table 18 are the depth to the seasonal high water table; the kind of water table, that is, *perched, artesian*, or *apparent;* and the months of the year that the water table commonly is highest. A water table that is seasonally high for less than 1 month is not indicated in table 18.

An *apparent* water table is a thick zone of free water in the soil. It is indicated by the level at which water stands in an uncased borehole after adequate time is allowed for adjustment in the surrounding soil. An *artesian* water table is under hydrostatic head, generally below an impermeable layer. When this layer is penetrated, the water level rises in an uncased borehole. A *perched* water table is water standing above an unsaturated zone. In places an upper, or perched, water table is separated from a lower one by a dry zone.

The two numbers in the "High water table-Depth" column indicate the normal range in depth to a saturated zone. Depth is given to the nearest half foot. The first numeral in the range indicates the highest water level. A plus sign preceding the range in depth indicates that the water table is above the surface of the soil. "More than 6.0" indicates that the water table is below a depth of 6 feet or that the water table exists for less than a month.

Risk of corrosion pertains to potential soil-induced electrochemical or chemical action that dissolves or weakens uncoated steel or concrete. The rate of corrosion of uncoated steel is related to such factors as soil moisture, particle-size distribution, acidity, and electrical conductivity of the soil. The rate of corrosion of concrete is based mainly on the sulfate and sodium content, texture, moisture content, and acidity of the soil. Special site examination and design may be needed if the combination of factors creates a severely corrosive environment. The steel in installations that intersect soil boundaries or soil layers is more susceptible to corrosion than steel in installations that are entirely within one kind of soil or within one soil layer.

For uncoated steel, the risk of corrosion, expressed as *low*, *moderate*, or *high*, is based on soil drainage class, total acidity, electrical resistivity near field capacity, and electrical conductivity of the saturation extract.

For concrete, the risk of corrosion is also expressed as *low*, *moderate*, or *high*. It is based on soil texture, acidity, and the amount of sulfates in the saturation extract.

Physical and Chemical Analyses of Selected Soils

D.E. Pettry, professor of soil science, Mississippi State University, prepared this section.

The results of physical and chemical analyses of several typical pedons in the survey area are given in table 19. The data are for soils sampled at carefully selected sites. The pedons are typical of the series and are described in the section "Soil Series and Their Morphology." Soil samples were analyzed by the Soil Genesis and Morphology Laboratory of the Mississippi Agricultural and Forestry Experiment Station.

Physical Analysis

The physical properties of soils, such as infiltration and conduction, shrink-swell potential, crusting, consistence, and available water capacity, are closely related to soil texture (the percentage of sand, silt, and clay).

The deep, level soils on flood plains and terraces, such as Bigbee soils, have high sand content. These soils tend to be droughty because the water infiltration is rapid and the available water holding capacity is low. Susquehanna soils formed in clayey parent material on uplands, and they are fine textured with high content of expansive montmorillonitic clay. The clay content remains high to a depth of 60 inches or more. The clayey Annemaine soils typically formed in loamy sediment and have a fine-textured subsoil. The clay content decreases before a depth of 60 inches.

Chemical Analyses

Soil chemical properties and other soil features, such as permeability, structure, and texture, influence the limitations and potentials of any soil. Chemical properties are not evident in visual observations of a soil; laboratory analyses are necessary to define the characteristics. The amount and type of clay minerals present and the organic matter content largely regulate the chemical nature of soils. These substances have the capacity to attract and hold cations. Cations are elements that have a positive charge and are bonded to clay minerals and organic matter that have a negative charge.

The exchangeable cations can be removed or exchanged through leaching or plant uptake. This mechanism of cation exchange can correct soil acidity by liming. It is useful to note that 1 milliequivalent per 100 grams of extractable acidity (hydrogen plus aluminum) requires 1,000 pounds of calcium carbonate (lime) per acre to neutralize it.

Soil chemical data are expressed as millequivalents (meq) per 100 grams of dry soil. The data can be converted to the common units of pounds per acre for the surface plow layer. The plow layer, or topsoil, of average soils to a depth of 6.67 inches weighs about 2 million pounds. The conversion for the cations listed in table 19 are as follows:

Calcium (Ca) meq/100 grams x 400 = pounds per acre
Magnesium (Mg) meq/100 grams x 240 = pounds per acre
Potassium (K) meq/100 grams x 780 = pounds per acre
Sodium (Na) meq/100 grams x 460 = pounds per acre

Soils of Jones County differ drastically in their capacity to retain plant nutrients. Clayey soils, such as Annemaine and Susquehanna soils, have high cation exchange capacities. Sandy soils, such as Bigbee soils, have very low capacities to retain plant nutrients. Cation exchange capacities in loamy soils, such as Savannah soils, are low to moderate. Conditions are suitable for the growth of most plants when the cation exchange capacity of a soil is about 60 percent satisfied by calcium, 15 to 20 percent by magnesium, 5 percent by potassium, and not more than 20 percent by cations, such as sodium, hydrogen, and aluminum. The soil pH should be between 6 and 7 if the exchangeable cation composition is like this. Most of the soils in Jones County are acid because of weathering, high rates of leaching, and siliceous parent materials.

The Soil Taxonomy *(10)* classification system used in the National Cooperative Soil Survey uses chemical soil properties as differentiating criteria in some categories of the system. The Alfisol and Ultisol orders, which are classes in the highest category in the system, are separated on the basis of percentage base saturation deep in the subsoil. Ultisols have base saturation levels of less than 35 percent in the lower part of the soil, whereas in Alfisols, such values are greater than 35 percent. For example, Susquehanna soils have base

saturation levels greater than 35 percent at a depth below 4 feet, and they are Alfisols.

Determinations were made on soil materials smaller than 2 millimeters in diameter. Measurements of unit weight were calculated on an oven-dry basis. The methods used in obtaining the data are indicated in the list that follows. The codes in parentheses refer to published methods *(12).*

Particle size analyses—Day's *(4)* hydrometer method.

Extractable cations—ammonium acetate pH 7.0, uncorrected; calcium (6N2), magnesium (6O2), sodium (6P2), potassium (6Q2).

Extractable acidity—barium chloride-triethanolamine 1 (6H1a).

Cation-exchange capacity—sum of cations (5A3a).

Base Saturation—sum of cations, TEA, pH 8.2 (5C3).

Reaction—1:1 water dilution (8C12).

Organic carbon—dichromate, ferric sulfate titration (6A1a).

Classification of the Soils

The system of soil classification used by the National Cooperative Soil Survey has six categories *(10)*. Beginning with the broadest, these categories are the order, suborder, great group, subgroup, family, and series. Classification is based on soil properties observed in the field or inferred from those observations or on laboratory measurements. Table 20 shows the classification of the soils in the survey area. The categories are defined in the following paragraphs.

ORDER. Ten soil orders are recognized. The differences among orders reflect the dominant soil-forming processes and the degree of soil formation. Each order is identified by a word ending in *sol*. An example is Entisol.

SUBORDER. Each order is divided into suborders, primarily on the basis of properties that influence soil genesis and are important to plant growth or properties that reflect the most important variables within the orders. The last syllable in the name of a suborder indicates the order. An example is Aquent (*Aqu*, meaning water, plus *ent*, from Entisol).

GREAT GROUP. Each suborder is divided into great groups on the basis of close similarities in kind, arrangement, and degree of development of pedogenic horizons; soil moisture and temperature regimes; and base status. Each great group is identified by the name of a suborder and by a prefix that indicates a property of the soil. An example is Fluvaquents (*Fluv*, meaning flood plain, plus *aquent*, the suborder of the Entisols that have an aquic moisture regime).

SUBGROUP. Each great group has a typic subgroup. Other subgroups are intergrades or extragrades. The typic is the central concept of the great group; it is not necessarily the most extensive. Intergrades are transitions to other orders, suborders, or great groups. Extragrades have some properties that are not representative of the great group but do not indicate transitions to any other known kind of soil. Each subgroup is identified by one or more adjectives preceding the name of the great group. The adjective *Typic* identifies the subgroup that typifies the great group. An example is Typic Fluvaquents.

FAMILY. Families are established within a subgroup on the basis of physical and chemical properties and other characteristics that affect management. Mostly the properties are those of horizons below plow depth where there is much biological activity. Among the properties and characteristics considered are particle-size class, mineral content, temperature regime, depth of the root zone, consistence, moisture equivalent, slope, and permanent cracks. A family name consists of the name of a subgroup preceded by terms that indicate soil properties. An example is coarse-loamy, siliceous, acid, thermic Typic Fluvaquents.

SERIES. The series consists of soils that have similar horizons in their profile. The horizons are similar in color, texture, structure, reaction, consistence, mineral and chemical composition, and arrangement in the profile. There can be some variation in the texture of the surface layer or of the substratum within a series. The Bibb soils in Jones County are coarse-loamy, siliceous, acid, thermic Typic Fluvaquents.

Soil Series and Their Morphology

In this section, each soil series recognized in the survey area is described. The descriptions are arranged in alphabetic order.

Characteristics of the soil and the material in which it formed are identified for each series. The soil is compared with similar soils and with nearby soils of other series. A pedon, a small three-dimensional area of soil, that is typical of the series in the survey area is described. The detailed description of each soil horizon follows standards in the *Soil Survey Manual (9)*. Many of the technical terms used in the descriptions are defined in *Soil Taxonomy (10)*. Unless otherwise stated, colors in the descriptions are for moist soil. Following the pedon description is the range of important characteristics of the soils in the series.

The map units of each soil series are described in the section "Detailed Soil Map Units."

Annemaine Series

The Annemaine series consists of moderately well drained soils that formed in loamy and clayey sediment on low stream terraces bordering flood plains. Slopes range from 0 to 2 percent. The soils of the Annemaine series are clayey, mixed, thermic Aquic Hapludults.

Annemaine soils are associated with Cahaba, Jena, and Stough soils. Well drained Cahaba soils are in slightly higher positions on the landscape than Annemaine soils, have a fine-loamy control section, and

do not have mottles that have chroma of 2 or less in the upper 24 inches of the argillic horizon. Well drained Jena soils are on flood plains and are coarse-loamy in the particle-size control section. Somewhat poorly drained Stough soils are in similar positions on the landscape, have a coarse-loamy control section, and are brittle and compact in as much as 40 to 55 percent, by volume, of the lower part of the B horizon.

Typical pedon of Annemaine silt loam, occasionally flooded; in a wooded area 7 miles west of Ellisville on State Highway 588, 2,500 feet east of Leaf River Bridge, and 40 feet north of Highway 588, SW1/4NE1/4 sec. 32, T. 8 N., R. 13 W.

A—0 to 6 inches; very dark grayish brown (10YR 3/2) silt loam; weak medium granular structure; friable; many fine and medium roots; very strongly acid; clear smooth boundary.

Bt1—6 to 14 inches; yellowish red (5YR 4/6) silty clay; moderate fine and medium subangular blocky structure; firm; many fine and medium roots; clay films on faces of peds; very strongly acid; gradual wavy boundary.

Bt2—14 to 25 inches; yellowish red (5YR 4/6) silty clay; common fine distinct light brownish gray (2.5Y 6/2) mottles; moderate fine angular blocky structure; firm; few fine and medium roots; patchy clay films on faces of peds; very strongly acid; gradual wavy boundary.

Bt3—25 to 43 inches; mottled yellowish red (5YR 4/6), light gray (10YR 7/2), and light yellowish brown (10YR 6/4) silty clay; moderate fine angular blocky structure; firm; few fine roots; patchy clay films on faces of peds; very strongly acid; gradual wavy boundary.

BC—43 to 60 inches; mottled strong brown (7.5YR 5/6), dark red (10R 3/6), and light gray (10YR 7/2) loam; weak coarse subangular blocky structure; friable; few fine roots; few patchy clay films on faces of peds; few medium very dark gray (10YR 3/1) concretions; very strongly acid.

Thickness of the solum is 40 to 52 inches. Reaction is very strongly acid or strongly acid throughout except where the surface layer has been limed. The particle-size control section is 35 to 45 percent clay.

The Ap or A horizon has hue of 10YR, value of 3 or 4, and chroma of 2 or 3. The E horizon, if present, has hue of 10YR, value of 5, and chroma of 4.

The upper part of the Bt horizon has hue of 5YR, value of 4 or 5, and chroma of 6 to 8. The lower part is commonly mottled in shades of red, brown, and gray. Grayish mottles are within the upper 20 inches of the Bt horizon. The Bt horizon is silty clay, clay loam, or clay.

The BC horizon has the same color range as the Bt horizon, or it is mottled in shades of gray, brown, and red. It is loam, sandy clay loam, or clay loam.

The C horizon, if present, is mottled in shades of gray, yellow, brown, and red, or it has a matrix in shades of brown or gray that has mottles of yellow and brown. It is sandy loam or fine sandy loam. The C horizon can be stratified.

Laboratory data from this pedon indicates that the Bt1 horizon pH is 4.3, the Bt2 horizon pH 4.4, and the Bt3 horizon pH 4.3. The lowest allowable pH for the Annemaine series is 4.5. This slight numerical difference is considered to be within the allowable range of error of observation for determination of soil reaction, and the Annemaine soils in Jones County are not considered to be taxadjuncts.

Benndale Series

The Benndale series consists of well drained soils that formed in loamy marine deposits or alluvium on uplands and terraces. Slopes range from 0 to 12 percent. The soils of the Benndale series are coarse-loamy, siliceous, thermic Typic Paleudults.

Benndale soils are associated with Harleston, Heidel, Malbis, and Ruston soils. Moderately well drained Harleston soils are on low terraces bordering flood plains and have mottles that have chroma of 2 or less within a depth of 30 inches. Well drained Heidel soils are on upland hillsides and have a Bt horizon in hue of 5YR or redder. Moderately well drained Malbis soils are on broad slopes on uplands and have a fine-loamy particle-size control section and from 5 to 25 percent, by volume, plinthite nodules in the lower part of the Bt horizon. Well drained Ruston soils are in similar positions on the landscape as Benndale soils and have a fine-loamy particle-size control section and a Bt horizon that has hue of 2.5YR or 5YR.

Typical pedon of Benndale fine sandy loam, 2 to 5 percent slopes; 1 mile west of Ovett along a paved county road, 1 mile south along a north-south paved county road, and southeastward along an intersecting paved county road, in a wooded area 30 feet west of road and 3,300 feet north of the intersection with Tucker's Gravel Pit Road, SW1/4NE1/4 sec. 25, T. 6 N., R. 11 W.

A—0 to 4 inches; dark grayish brown (10YR 4/2) fine sandy loam; weak fine granular structure; friable; many fine and medium roots; very strongly acid; clear smooth boundary.

BE—4 to 10 inches; yellowish brown (10YR 5/4) fine sandy loam; weak medium subangular blocky structure; friable; many fine and medium roots; very strongly acid; clear smooth boundary.

Bt1—10 to 42 inches; strong brown (7.5YR 5/8) sandy loam; weak medium subangular blocky structure; friable; few fine roots; sand grains coated and bridged with clay; very strongly acid; gradual smooth boundary.

Bt2—42 to 60 inches; brownish yellow (10YR 6/8) sandy loam; few medium distinct strong brown (7.5YR 5/8) mottles; weak medium subangular blocky structure; friable; sand grains coated and bridged with clay; very strongly acid.

Thickness of the solum is more than 60 inches. Reaction is very strongly acid or strongly acid throughout except where the surface layer has been limed.

The A horizon has hue of 10YR, value of 3 to 5, and chroma of 1 or 2.

The BE or E horizon, if present, has hue of 10YR, value of 4 to 6, and chroma of 2 to 4. It is fine sandy loam, sandy loam, or loamy sand.

The upper part of the Bt horizon has hue of 10YR or 7.5YR, value of 5 or 6, and chroma of 4 to 8. It is sandy loam or loam. The lower part of the Bt horizon has the same range in color as the upper part, but it has few to many mottles in shades of gray, brown, or red. It is sandy loam, fine sandy loam, sandy clay loam, or loam. The upper 20 inches of the Bt horizon is from 8 to 18 percent clay content. Some pedons have as much as 5 percent, by volume, nodules of plinthite in the lower part of the Bt horizon.

Bibb Series

The Bibb series consists of poorly drained soils that formed in stratified loamy and sandy alluvium on flood plains. Slopes range from 0 to 2 percent. The soils of the Bibb series are coarse-loamy, siliceous, acid, thermic Typic Fluvaquents.

Bibb soils are associated with Quitman, Stough, and Trebloc soils. Moderately well drained Quitman soils are on low terraces bordering flood plains, have argillic Bt horizons, and are fine-loamy. Somewhat poorly drained Stough soils are on stream terraces, have argillic horizons, and are 40 to 55 percent brittle and compact in the lower part. Poorly drained Trebloc soils are on low stream terraces, upland flats, and flood plains and are fine-silty in the control section.

Typical pedon of Bibb silt loam, frequently flooded; 0.5 mile west of Indian Spring, 400 feet north on a gravel road, and 50 feet west, SE1/4NE1/4 sec. 8, T. 8 N., R. 12 W.

A—0 to 6 inches; grayish brown (10YR 5/2) silt loam; common medium distinct dark brown (7.5YR 4/4) mottles; weak fine granular structure; friable; many fine and medium roots; very strongly acid; clear smooth boundary.

Cg1—6 to 17 inches; light brownish gray (10YR 6/2) fine sandy loam; common medium distinct light yellowish brown (10YR 6/4) mottles and few fine distinct strong brown (7.5YR 5/6) mottles; massive; friable; few fine black concretions; few fine and medium roots; very strongly acid; gradual wavy boundary.

Cg2—17 to 26 inches; light gray (10YR 7/2) fine sandy loam; common medium distinct brownish yellow (10YR 6/6) mottles and common fine distinct strong brown (7.5YR 5/8) mottles; massive; friable; few fine roots; few thin strata of loam and loamy sand; very strongly acid; gradual wavy boundary.

Cg3—26 to 60 inches; light gray (10YR 7/2) loamy sand; few medium faint yellowish brown (10YR 6/4) mottles; massive; firm; few strata of sand; very strongly acid.

The soil is very strongly acid or strongly acid throughout.

The A horizon has hue of 10YR, value of 3 to 5, and chroma of 1 or 2. It is silt loam or fine sandy loam. The Ag horizon, if present, has hue of 10YR, value of 4 to 7, and chroma of 1 or 2. It is sandy loam or silt loam.

The Cg horizon has hue of 10YR to 5Y, value of 4 to 7, and chroma of 1 or 2, and it has few to many mottles in shades of red, brown, and yellow. It is sand, fine sandy loam, sandy loam, loamy sand, silt loam, or loam. The particle-size control section has less than 18 percent clay content.

Bigbee Series

The Bigbee series consists of excessively drained soils formed in sandy alluvial sediment on low terraces and flood plains. Slopes range from 0 to 5 percent. The soils of the Bigbee series are thermic, coated Typic Quartzipsamments.

Bigbee soils are associated with Cahaba, Jena, and Prentiss soils. Well drained Cahaba soils are on low terraces bordering flood plains and have a fine-loamy control section. Well drained Jena soils are on flood plains and have a coarse-loamy control section. Moderately well drained Prentiss soils are on stream terraces and have a coarse-loamy control section and a fragipan.

Typical pedon of Bigbee loamy sand, occasionally flooded; in cultivated field 3 miles south of Hebron on a county road and 0.5 mile west on Horseshoe Lake Road, 40 feet south of the road, SW1/4NE1/4 sec. 14, T. 8 N., R. 14 W.

Ap—0 to 9 inches; brown (10YR 4/3) loamy sand; weak medium granular structure; very friable; many fine and medium roots; very strongly acid; clear smooth boundary.

C1—9 to 38 inches; strong brown (7.5YR 5/6) loamy sand; single grained; loose; many fine and medium roots; very strongly acid; gradual wavy boundary.

C2—38 to 65 inches; very pale brown (10YR 7/3) sand; single grained; loose; many fine and medium roots; very strongly acid; gradual wavy boundary.

Thickness of the loamy sand and sand is more than 80 inches. Reaction is very strongly acid or strongly acid throughout except where the surface layer has been limed.

The A horizon has hue of 10YR, value of 3 or 4, and chroma of 3 or 4.

The upper part of the C horizon has hue of 10YR or 7.5YR, value of 5, and chroma of 6 to 8. It is sand or loamy sand. The lower part of the C horizon has hue of 10YR, value of 6 or 7, and chroma of 3 or 4. Mottles, if present, are in shades of brown. Some pedons have pockets of uncoated sand grains. This part of the C horizon is sand or loamy sand.

Laboratory data from this pedon indicate that the C1 horizon pH is 4.3. The lowest allowable pH for the Bigbee series is 4.5. This slight numerical difference is considered to be within the allowable range of error of observation for determination of soil reaction, and the Bigbee soils in Jones County are not considered to be taxadjuncts.

Cahaba Series

The Cahaba series consists of well drained soils that formed in loamy and sandy alluvial deposits on low terraces bordering flood plains. Slopes range from 0 to 2 percent. The soils of the Cahaba series are fine-loamy, siliceous, thermic Typic Hapludults.

Cahaba soils are associated with Annemaine, Bigbee, and Prentiss soils. Moderately well drained Annemaine soils are on uplands and terraces bordering flood plains and have a clayey control section and mottles that have chroma of 2 or less within the upper 24 inches. Excessively drained Bigbee soils are in similar positions on the landscape as Cahaba soils, have a sandy control section, and do not have an argillic horizon. Moderately well drained Prentiss soils are on stream terraces and have a coarse-loamy control section, a B horizon that has hue of 10YR, and a fragipan.

Typical pedon of Cahaba sandy loam, occasionally flooded; in a cultivated field about 0.5 mile south of the Sanford Interchange on Interstate 59, 200 feet north of a pipeline crossing, on west side of road. NW1/4NW1/4 sec. 16, T. 6 N., R. 13 W.

Ap—0 to 6 inches; dark grayish brown (10YR 4/2) sandy loam; weak medium granular structure; very friable; many fine roots; few charcoal fragments; very strongly acid; clear smooth boundary.

Bt1—6 to 21 inches; red (2.5YR 4/6) sandy clay loam; weak medium subangular blocky structure; friable; sand grains coated and bridged with clay; patchy clay films on faces of peds; very strongly acid; gradual wavy boundary.

Bt2—21 to 33 inches; yellowish red (5YR 5/8) sandy loam; weak medium subangular blocky structure; friable; sand grains coated and bridged with clay; few fine and medium quartz gravel; very strongly acid; gradual wavy boundary.

C1—33 to 42 inches; strong brown (7.5YR 5/6) loamy sand; single grained; loose; few fine and medium gravel; very strongly acid; gradual wavy boundary.

C2—42 to 65 inches; very pale brown (10YR 7/3) coarse sand; single grained; loose; few fine and medium gravel; very strongly acid.

Thickness of the solum ranges from 30 to 60 inches. The soil is very strongly acid or strongly acid throughout except where the surface layer has been limed.

The A or Ap horizon has hue of 10YR, value of 3 to 5, and chroma of 2 to 4. It is sandy loam or loamy sand.

The E horizon, if present, has hue of 10YR, value of 5 or 6, and chroma of 2 to 4.

The Bt horizon has hue of 5YR or 2.5YR, value of 4 or 5, and chroma of 6 to 8. It is loam, clay loam, or sandy clay loam. The upper 20 inches of the Bt horizon is 18 to 35 percent clay content.

Some pedons have a BC horizon. If present, it has hue of 7.5YR to 2.5YR, value of 5 or 6, and chroma of 4 to 6. Mottles are in shades of yellow and brown. The BC horizon is loam or sandy loam.

The C horizon has hue of 10YR to 2.5YR, value of 4 to 6, and chroma of 4 to 8. Some pedons have mottles in shades of yellow, brown, and gray. The C horizon is sand, loamy sand, or sandy loam.

Freest Series

The Freest series consists of moderately well drained soils that formed in loamy and clayey sediment in uplands. Slopes range from 0 to 8 percent. The soils of the Freest series are fine-loamy, siliceous, thermic Aquic Paleudalfs.

Freest soils are associated with Petal, Savannah, and Susquehanna soils. Moderately well drained Petal soils are in similar positions on uplands as Freest soils and have Bt horizons that are reddish in the upper part. Moderately well drained Savannah soils commonly are in adjacent or slightly higher areas of uplands than Freest soils and have a fragipan. Somewhat poorly drained Susquehanna soils commonly are on adjacent upland ridges and hillsides and have a clayey subsoil and vertic properties.

Typical pedon of Freest fine sandy loam, 5 to 8 percent slopes; in a pasture 500 feet southeast of Pecan Grove Church, SW1/4NE1/4 sec. 6, T. 7 N., R. 11 W.

Ap—0 to 4 inches; grayish brown (10YR 5/2) fine sandy loam; weak fine granular structure; very friable; many fine and medium roots; very strongly acid; abrupt smooth boundary.

E—4 to 7 inches; pale brown (10YR 6/3) fine sandy loam; weak fine granular structure; very friable; few

fine and medium roots; very strongly acid; clear smooth boundary.
Bt1—7 to 18 inches; yellowish brown (10YR 5/6) loam; weak medium subangular blocky structure; friable; few fine roots; thin patchy clay films on faces of peds; very strongly acid; gradual smooth boundary.
Bt2—18 to 23 inches; yellowish brown (10YR 5/6) loam; common medium prominent red (2.5YR 4/8) mottles; weak medium angular blocky structure; friable; patchy clay films on faces of peds; very strongly acid; gradual wavy boundary.
Bt3—23 to 26 inches; mottled light yellowish brown (10YR 6/4), yellowish brown (10YR 5/8), red (2.5YR 4/8), and light gray (10YR 7/2) clay loam; weak medium subangular blocky structure; friable; patchy clay films on faces of peds; very strongly acid; gradual wavy boundary.
Bt4—26 to 41 inches; mottled light gray (10YR 6/1), red (10R 4/6), and strong brown (7.5YR 5/8) clay; moderate fine angular blocky structure; firm, plastic and sticky; clay films on faces of peds; very strongly acid; gradual wavy boundary.
Bt5—41 to 53 inches; light gray (5Y 7/2) clay; coarse fine prominent weak red (10R 4/4) and yellowish brown (10YR 5/6) mottles; moderate fine angular blocky structure; firm, plastic and sticky; clay films on faces of peds; very strongly acid; gradual wavy boundary.
Bt6—53 to 62 inches; mottled light gray (5Y 7/2), strong brown (7.5YR 5/6), and weak red (10R 4/4) clay; strong fine angular structure; firm, plastic and sticky; clay films on faces of peds; very strongly acid.

Thickness of the solum is more than 60 inches. Reaction is very strongly acid or strongly acid throughout except where the surface layer has been limed.

The A horizon has hue of 10YR, value of 4 or 5, and chroma of 2 or 3. The Ap horizon has hue of 10YR, value of 5, chroma of 2 or 3; or it has hue of 10YR, value of 6, and chroma of 3.

The E horizon, if present, has hue of 10YR, value of 5 or 6, and chroma of 2 to 4.

The upper part of the Bt horizon has hue of 10YR, value of 5 to 6, and chroma of 4 to 6. Mottles, if present, are in shades of brown, yellow, and gray. In some pedons, the horizon is mottled in shades of gray, brown, and yellow. It is loam or sandy clay loam. The lower part of the Bt horizon is mottled in shades of brown, gray, and red, or it has a matrix in hue of 10YR to 5Y, value of 6 or 7, and chroma of 1 or 2. It is clay loam, silty clay, or clay.

Harleston Series

The Harleston series consists of moderately well drained soils that formed in loamy sediment on low terraces bordering flood plains. Slopes range from 0 to 2 percent. The soils of the Harleston series are coarse-loamy, siliceous, thermic Aquic Paleudults.

Harleston soils are associated with Benndale and Quitman soils. Well drained Benndale soils are in slightly higher positions on uplands and terraces than Harleston soils and do not have gray mottles within a depth of 30 inches. Moderately well drained Quitman soils are on low terraces bordering flood plains and have more than 18 percent clay content in the control section.

Typical pedon of Harleston fine sandy loam, in an area of Harleston-Cahaba association, occasionally flooded; in a clear cut woodland prepared for replanting, 6 miles east of Moselle on Moselle-Ovett road, 1 mile north of Union, and 1 mile east, NE1/4SE1/4 sec. 10, T. 6 N., R. 12 W.

Ap—0 to 6 inches; dark grayish brown (10YR 4/2) fine sandy loam; weak medium granular structure; friable; many fine roots; strongly acid; clear smooth boundary.
Bt1—6 to 23 inches; yellowish brown (10YR 5/4) sandy loam; weak medium subangular blocky structure; friable; few fine roots; sand grains coated and bridged with clay; very strongly acid; gradual smooth boundary.
Bt2—23 to 34 inches; yellowish brown (10YR 5/4) loam; common medium distinct light brownish gray (10YR 6/2) mottles and common medium distinct strong brown (7.5YR 5/6) mottles; weak medium subangular blocky structure; friable; few fine roots; sand grains coated and bridged with clay; very strongly acid; gradual smooth boundary.
Bt3—34 to 62 inches; mottled light brownish gray (10YR 6/2) and reddish brown (5YR 4/4) sandy clay loam; weak medium subangular blocky structure; friable; sand grains coated and bridged with clay; patchy clay films on faces of peds; very strongly acid.

Thickness of the solum is more than 60 inches. Reaction is very strongly acid or strongly acid throughout except where the surface layer has been limed.

The A or Ap horizon has hue of 10YR, value of 3 to 5, and chroma of 1 to 3.

The E horizon, if present, has hue of 10YR, value of 4 to 6, and chroma of 3 or 4. It is loam, sandy loam, or fine sandy loam.

The upper part of the Bt horizon has hue of 7.5YR or 10YR, value of 5 or 6, and chroma of 4 to 8. Few to many mottles that have chroma of 2 are within a depth of 30 inches. Texture is sandy loam or loam. The upper 20 inches of the Bt horizon is 8 to 18 percent clay content and from 25 to 45 percent silt. The lower part of the Bt horizon has hue of 10YR, value of 5 or 6, and chroma of 6 and has few to many mottles of chroma of 2 or less, or it is mottled in shades of brown, red, and gray. This part of the Bt horizon is sandy loam, sandy clay, or loam.

Heidel Series

The Heidel series consists of well drained soils that formed in loamy sediment on uplands. Slopes range from 5 to 20 percent. The soils of the Heidel series are coarse-loamy, siliceous, thermic Typic Paleudults.

Heidel soils are associated with the well drained Benndale, McLaurin, Ruston, and Smithdale soils. Benndale soils are on uplands and terraces and have a Bt horizon that has a matrix hue of 7.5YR or yellower. McLaurin soils are on uplands and have a bisequum. Ruston and Smithdale soils are on uplands and are fine-loamy in the control section.

Typical pedon of Heidel loamy sand, in an area of Heidel-McLaurin association, hilly; in a forest 6 miles east of Moselle, along Moselle-Ovett road, 1 mile south along a local road, and 150 feet west. SE1/4SW1/4 sec. 22, T. 6 N., R. 12 W.

A—0 to 4 inches; dark grayish brown (10YR 4/2) loamy sand; weak fine granular structure; very friable; common fine roots; very strongly acid; clear smooth boundary.

E—4 to 12 inches; yellowish brown (10YR 5/4) loamy sand; weak fine granular structure; common fine roots; very friable; very strongly acid; clear smooth boundary.

Bt1—12 to 50 inches; red (2.5YR 5/6) sandy loam; weak medium subangular blocky structure; friable; common fine roots; sand grains coated and bridged with clay and oxides; very strongly acid; gradual wavy boundary.

Bt2—50 to 68 inches; red (2.5YR 5/6) sandy loam; weak medium subangular blocky structure; friable; few fine roots; sand grains coated and bridged with clay; few pockets of uncoated and pale brown sand grains; very strongly acid; gradual wavy boundary.

Bt3—68 to 85 inches; red (2.5YR 5/6) sandy loam; weak medium subangular blocky structure; friable; sand grains coated and bridged with clay and oxides; few pockets of uncoated sand grains; very strongly acid.

Thickness of the solum is more than 60 inches. Reaction is very strongly acid or strongly acid throughout except where the surface layer has been limed. Some pedons have as much as 5 to 10 percent, by volume, chert gravel.

The A horizon has hue of 10YR, value of 3 or 4, and chroma of 2 to 4.

The E horizon, if present, has hue of 10YR, value of 4 or 5, and chroma of 3 or 4. It is fine sandy loam or loamy sand.

The Bt horizon has hue of 5YR or 2.5YR, value of 4 or 5, and chroma of 6 to 8. It is sandy loam or loam. The lower part of the Bt horizon has few or common pockets of uncoated sand grains. The particle-size control section, the upper 20 inches of the Bt horizon, is 10 to 18 percent clay content.

Jena Series

The Jena series consists of well drained soils that formed in loamy alluvium on flood plains. Slopes range from 0 to 2 percent. The soils of the Jena series are coarse-loamy, siliceous, thermic Fluventic Dystrochrepts.

Jena soils are associated with Annemaine and Bigbee soils. Moderately well drained Annemaine soils are on low stream terraces bordering flood plains and have clayey textures in the Bt horizon. Excessively drained Bigbee soils are on low terraces and flood plains and have a sandy particle-size class in the 10- to 40-inch control section.

Typical pedon of Jena fine sandy loam, frequently flooded; in a wooded area south of Laurel on Queensburg Avenue; 1 mile southwest of Tallahala Creek Bridge on a gravel road, 150 feet north of channel, SW1/4NE1/4 sec. 24, T. 8 N., R. 12 W.

A—0 to 5 inches; brown (10YR 4/3) fine sandy loam; weak medium granular structure; very friable; many fine and medium roots; strongly acid; clear smooth boundary.

Bw1—5 to 9 inches; yellowish brown (10YR 5/4) fine sandy loam; weak medium granular and weak fine subangular blocky structure; friable; few fine roots; strongly acid; clear smooth boundary.

Bw2—9 to 21 inches; light yellowish brown (10YR 6/4) sandy loam; weak medium subangular blocky structure; friable; few fine roots; few fine pores; strongly acid; gradual smooth boundary.

Bw3—21 to 35 inches; yellowish brown (10YR 5/4) loam; weak medium subangular blocky structure; friable; few uncoated sand grains; strongly acid; gradual smooth boundary.

C1—35 to 51 inches; light yellowish brown (10YR 6/4) loamy fine sand; single grained; loose; strongly acid; clear smooth boundary.

C2—51 to 58 inches; yellowish brown (10YR 5/6) loamy fine sand; single grained; loose; strongly acid; gradual smooth boundary.

C3—58 to 62 inches; pale brown (10YR 6/3) loamy fine sand; single grained; loose; strongly acid.

Thickness of the solum is 20 to 50 inches. Reaction is very strongly acid or strongly acid throughout except where the surface layer has been limed.

The A horizon has hue of 10YR, value of 4 or 5, and chroma of 2 or 3.

The Bw horizon has hue of 10YR, value of 5, chroma of 4 to 8; or hue of 10YR, value of 6, and chroma of 3 or 4; or hue of 7.5YR, value of 5, and chroma of 8. Texture is fine sandy loam, sandy loam, or loam. The particle-size control section, the 10- to 40-inch section, is 10 to 18 percent clay content.

The C horizon has hue of 10YR, value of 5 or 6, and chroma of 3 to 6. It is sandy loam or loamy fine sand.

Lucedale Series

The Lucedale series consists of well drained soils that formed in loamy marine sediment on uplands. Slopes range from 0 to 2 percent. The soils of the Lucedale series are fine-loamy, siliceous, thermic Rhodic Paleudults.

Lucedale soils are associated with McLaurin and Savannah soils. Well drained McLaurin soils have 10 to 18 percent clay content in the upper part of the Bt horizon, are bisequal, and are on upland ridgetops. Moderately well drained Savannah soils have a fragipan and are on upland ridgetops and hillsides.

Typical pedon of Lucedale loam, 0 to 2 percent slopes; in a cultivated field 1/4 mile northwest of Union Crossroads, NE1/4SE1/4 sec. 16, T. 6 N., R. 12 W.

Ap—0 to 7 inches, dark reddish brown (5YR 3/3) loam; weak fine granular structure; friable; many fine roots; strongly acid; gradual smooth boundary.
Bt1—7 to 43 inches; dark red (2.5YR 3/6) loam; moderate medium subangular blocky structure; friable; many fine roots; patchy clay films on faces of peds; strongly acid; gradual smooth boundary.
Bt2—43 to 62 inches; dark reddish brown (2.5YR 3/4) loam; weak medium subangular blocky structure; friable; few fine roots; pockets of uncoated sand grains; patchy clay films on faces of peds; strongly acid; gradual smooth boundary.
Bt3—62 to 70 inches; dark reddish brown (2.5YR 3/4) loam; many medium distinct yellowish red (5YR 4/8) mottles; weak medium subangular blocky structure; friable; common pockets of uncoated sand grains; patchy clay films on faces of peds; strongly acid.

Thickness of the solum ranges from 60 inches to more than 80 inches. Reaction is very strongly acid or strongly acid throughout except where the surface layer has been limed.

The A horizon has hue of 5YR, value of 3, chroma of 3 and 4.

The upper part of the Bt horizon has hue of 2.5YR, value of 3, and chroma of 3 to 6. The lower part of the Bt horizon has hue of 2.5YR or 10R, value of 3, and chroma of 4 to 6. The Bt horizon is sandy clay loam or loam. The upper 20 inches of the Bt horizon is 20 to 30 percent clay content.

Malbis Series

The Malbis series consists of moderately well drained soils that formed in loamy marine sediment on uplands. Slopes range from 0 to 8 percent. The soils of the Malbis series are fine-loamy, siliceous, thermic Plinthic Paleudults.

Malbis soils are associated with Benndale, Savannah, and Susquehanna soils. Well drained Benndale soils are on uplands and terraces and have a coarse-loamy control section and less than 5 percent plinthite in the lower part of the subsoil. Moderately well drained Savannah soils are on uplands and have a fragipan and less than 5 percent plinthite nodules. Somewhat poorly drained Susquehanna soils are on uplands and have a fine control section.

Typical pedon of Malbis fine sandy loam, 2 to 5 percent slopes; in a wooded area 20 feet east of gravel road and 1,000 feet north of Forrest County line, 3.5 miles east of Eastabuchie, NW1/4SE1/4 sec. 32, T. 6 N., R. 12 W.

Ap—0 to 5 inches; grayish brown (10YR 5/2) fine sandy loam; weak medium granular structure; very friable; many fine roots; very strongly acid; clear smooth boundary.
E—5 to 8 inches; yellowish brown (10YR 5/6) loam; weak medium granular structure; friable; many fine roots; worm castings and root channels filled with Ap material; very strongly acid; clear smooth boundary.
Bt—8 to 18 inches; yellowish brown (10YR 5/6) loam; weak medium subangular blocky structure; friable; sand grains coated and bridged with clay; many fine roots; very strongly acid; gradual wavy boundary.
Btv1—18 to 32 inches; strong brown (7.5YR 5/8) loam; common medium distinct yellowish red (5YR 4/6) mottles; moderate medium subangular blocky structure; friable; few fine roots; about 4 percent, by volume, few fine plinthite nodules; clay films on faces of peds; strongly acid; gradual wavy boundary.
Btv2—32 to 38 inches; strong brown (7.5YR 5/8) loam; few coarse distinct brownish yellow (10YR 6/6) mottles; moderate medium angular blocky structure; firm; 15 to 20 percent plinthite nodules less than 1/2 inch across; common clay films on faces of peds; very strongly acid; gradual wavy boundary.
Btv3—38 to 60 inches; mottled strong brown (7.5YR 5/6), yellowish red (5YR 4/6), red(10R 4/6), and very pale brown (10YR 7/3) clay loam; moderate medium angular blocky structure; firm; about 5 percent plinthite nodules; patchy clay films on faces of peds; sand grains coated and bridged with clay; very strongly acid.

Thickness of the solum is more than 60 inches. Depth to horizons that have more than 5 percent plinthite ranges from 24 to 45 inches. Reaction is very strongly acid or strongly acid throughout except where the surface layer has been limed.

The A horizon has hue of 10YR, value of 3 to 5, and chroma of 2 or 3. It is fine sandy loam.

The E horizon, if present, has hue of 10YR, value of 5 or 6, and chroma of 2 to 6. It is fine sandy loam or loam.

The Bt horizon has hue of 10YR or 7.5YR, value of 4 or 5, and chroma of 6 to 8. The Btv horizon has colors similar to the Bt horizon but includes hue of 10YR, value

of 6, chroma of 6 to 8. It has few to many mottles in shades of brown, yellow, and red. In some pedons, mottles having chroma of 2 are below a depth of 30 inches. The Bt and Btv horizons are loam, sandy clay loam, or clay loam. The upper 20 inches of the Bt horizon is 22 to 35 percent clay content. Plinthite nodules range from 5 to 25 percent, by volume, in the Btv horizon.

McLaurin Series

The McLaurin series consists of well drained soils that formed in loamy marine deposits on uplands. Slopes range from 2 to 8 percent. The soils of the McLaurin series are coarse-loamy, siliceous, thermic Typic Paleudults.

McLaurin soils are associated with Heidel, Lucedale, Savannah, and Smithdale soils. Well drained Heidel soils are on uplands and do not have a bisequum. Well drained Lucedale soils are on uplands, have a fine-loamy control section, and are in a Rhodic subgroup. Moderately well drained Savannah soils are on uplands and have a fine-loamy control section and a fragipan. They are browner than McLaurin soils. Well drained Smithdale soils are on uplands, have a fine-loamy control section, and do not have a bisequum.

Typical pedon of McLaurin loamy sand, 2 to 5 percent slopes; in a pasture 3 miles southeast of Ellisville on State Highway 29, 1/4 mile south of abandoned military radar site, and 150 yards west of highway, SE1/4SW1/4 sec. 13, T. 7 N., R. 12 W.

Ap—0 to 5 inches; dark yellowish brown (10YR 4/4) loamy sand; weak fine granular structure; very friable; many fine roots; very strongly acid; clear smooth boundary.

Bt—5 to 26 inches; yellowish red (5YR 5/6) sandy loam; weak medium subangular blocky structure; friable; few fine roots; sand grains coated and bridged with clay; very strongly acid; gradual wavy boundary.

B/E—26 to 36 inches; yellowish red (5YR 5/8) sandy loam (B); common medium distinct reddish yellow (7.5YR 6/6) mottles (E); weak medium subangular blocky structure; very friable; very strongly acid; gradual wavy boundary.

B't1—36 to 49 inches; yellowish red (5YR 5/8) sandy clay loam; weak medium subangular blocky structure; friable; sand grains coated and bridged with clay; very strongly acid; gradual wavy boundary.

B't2—49 to 65 inches; red (2.5YR 4/6) sandy clay loam; weak medium subangular blocky structure; friable; sand grains coated and bridged with clay; very strongly acid.

Thickness of the solum ranges from 60 to more than 80 inches. Reaction is very strongly acid or strongly acid throughout except where the surface layer has been limed.

The A or Ap horizon has hue of 10YR, value of 4 or 5, and chroma of 2 to 4.

The E horizon, if present, has hue of 10YR, value of 4, and chroma of 3; or hue of 10YR, value of 5, and chroma of 3 to 6. It is sandy loam, fine sandy loam, or loamy sand.

The Bt horizon has hue of 10R, value of 4, and chroma of 6; hue of 2.5YR, value of 4 or 5, and chroma of 6; or hue of 5YR, value of 4 or 5, and chroma of 4 to 8. It is sandy loam or loam. The particle-size control section is from 10 to 18 percent clay content.

The B/E horizon has colors similar to the Bt horizon except the E material has hue of 7.5YR or 10YR, value of 6 or 7, and chroma of 3 to 6 and is as much as 10 to 25 percent, by volume, in a discontinuous pattern. The B/E horizon is loamy sand or sandy loam.

The B't horizon has hue of 2.5YR, value of 4, and chroma of 6; or hue of 5YR, value of 4 or 5, and chroma of 6 to 8. It is sandy clay loam, sandy loam, or loam.

Petal Series

The Petal series consists of moderately well drained soils that formed in loamy and clayey marine sediment on uplands. Slopes range from 8 to 15 percent. The soils of the Petal series are fine-loamy, siliceous, thermic Typic Paleudalfs.

Petal soils are associated with Freest and Susquehanna soils. Moderately well drained Freest soils are on uplands and have a Bt horizon in hue of 10YR or yellower and have slopes of less than 8 percent. Somewhat poorly drained Susquehanna soils are on uplands and have a clayey Bt horizon.

Typical pedon of Petal fine sandy loam, in an area of Susquehanna-Petal association, rolling; in a wooded area 9 miles east of Moselle on Moselle-Ovett road; 1 mile south along a gravel road, and 0.25 mile east, 3,500 feet southwest of the powerline and pipeline crossing on power line right-of-way, NW1/4SE1/4 sec. 19, T. 6 N., R. 11 W.

A—0 to 5 inches; dark grayish brown (10YR 4/2) fine sandy loam; weak medium granular structure; friable; many fine roots; very strongly acid; clear smooth boundary.

E—5 to 14 inches; pale brown (10YR 6/3) fine sandy loam; weak fine granular structure; friable; many fine roots; very strongly acid; clear smooth boundary.

Bt1—14 to 24 inches; strong brown (7.5YR 5/8) loam; few medium distinct yellowish red (5YR 5/6) mottles; weak medium subangular blocky structure; friable; few fine roots; patchy clay films on faces of peds; very strongly acid; clear wavy boundary.

Bt2—24 to 39 inches; mottled red (10R 4/6), yellowish brown (10YR 5/6), and light gray (10YR 7/2) clay loam; moderate fine angular blocky structure; firm;

clay films on faces of peds; strongly acid; gradual wavy boundary.

Bt3—39 to 63 inches; light brownish gray (2.5Y 6/2) clay; common medium distinct dark red (2.5YR 3/6) mottles; moderate fine angular blocky structure; plastic; clay films on faces of peds; strongly acid.

Thickness of the solum ranges from 60 to more than 80 inches. Reaction is very strongly acid or strongly acid throughout except where the surface layer has been limed.

The A horizon has hue of 10YR, value of 4 or 5, and chroma of 2 or 3.

The E horizon, if present, has hue of 10YR, value of 4 to 6, and chroma of 3 or 4. It is fine sandy loam, sandy loam, or loam.

The Bt1 horizon has hue of 5YR, value of 4 or 5, and chroma of 6 or 8; or hue of 7.5YR, value of 5, and chroma of 6 or 8. The Bt2 horizon has the same range in color as the Bt1 horizon, or it is mottled in shades of red, brown, and gray. The Bt horizon is loam or clay loam. The upper 20 inches of the Bt horizon is 20 to 35 percent clay content. The Bt3 horizon has hue of 10YR, value of 6 or 7, and chroma of 1 to 3 and few to many mottles in shades of red, gray, and brown, or it is mottled in these colors. The Bt3 horizon is clay loam, silty clay, or clay.

Prentiss Series

The Prentiss series consists of moderately well drained soils that formed in loamy sediment on stream terraces. These soils have a fragipan. Slopes range from 0 to 5 percent. The soils of the Prentiss series are coarse-loamy, siliceous, thermic Glossic Fragiudults.

Prentiss soils are associated with Bigbee, Cahaba, Stough, and Trebloc soils. Excessively drained Bigbee soils have a sandy control section and are on low terraces and flood plains. Well drained Cahaba soils have a solum less than 60 inches thick, do not have a fragipan, and are on low terraces bordering flood plains. Somewhat poorly drained Stough soils do not have a fragipan and are on stream terraces of slightly lower elevation than Prentiss soils. Poorly drained Trebloc soils have a fine-silty control section and are on low stream terraces, upland flats, and flood plains.

Typical pedon of Prentiss loam, 0 to 2 percent slopes; in a wooded area 1 mile north of Lake Bogue Homo, 1/4 mile west of Reedy Creek Bridge on a county road, 50 feet north of the road, SE1/4NW1/4 sec. 20, T. 9 N., R. 10 W.

A—0 to 7 inches; dark grayish brown (10YR 4/2) loam; weak medium granular structure; friable; many fine roots; very strongly acid; clear smooth boundary.

Bw—7 to 26 inches; yellowish brown (10YR 5/6) loam; weak medium subangular blocky structure; friable; many fine roots; sand grains coated and bridged with clay; very strongly acid; clear wavy boundary.

Btx1—26 to 49 inches; light yellowish brown (10YR 6/4) sandy loam; few medium faint yellowish brown (10YR 5/6), light gray (10YR 7/1), and few medium prominent brown (7.5YR 5/4) mottles; weak coarse prismatic structure parting to weak medium subangular blocky; firm, more than 70 percent compact and brittle; common fine voids; patchy clay films on faces of peds; very strongly acid; gradual smooth boundary.

Btx2—49 to 64 inches; mottled light gray (10YR 7/1), very pale brown (10YR 7/4), and strong brown (7.5YR 5/8) loam; weak coarse prismatic structure parting to moderate medium subangular blocky; firm, more than 70 percent compact and brittle; few fine voids; patchy clay films on faces of peds; very strongly acid.

Thickness of the solum is more than 60 inches. Reaction is very strongly acid or strongly acid throughout except where the surface layer has been limed.

The A horizon has hue of 10YR, value of 4 or 5, and chroma of 2 or 3, or value of 3 and chroma of 2, or value of 5 and chroma of 3 or 4.

The Bw horizon has hue of 10YR, value of 5, and chroma of 4 to 6, or value of 6 and chroma of 4. It is loam, silt loam, or sandy loam.

The Btx horizon has hue of 10YR, value of 5, and chroma of 4, or value of 6 and chroma of 3 or 4; or it is mottled in shades of yellow, brown, gray, and red. It is loam, sandy loam, or fine sandy loam. The particle-size control section, between a depth of 10 inches and the top of the fragipan, has a clay content of 12 to 18 percent.

Quitman Series

The Quitman series consists of moderately well drained soils formed in loamy sediment on low terraces bordering flood plains. Slopes range from 0 to 2 percent. The soils of the Quitman series are fine-loamy, siliceous, thermic Aquic Paleudults.

Quitman soils are associated with Bibb, Harleston, and Trebloc soils. Poorly drained Bibb soils have a coarse-loamy control section and are on flood plains. Moderately well drained Harleston soils have a coarse-loamy control section and are on low terraces bordering flood plains. Poorly drained Trebloc soils have a fine-silty control section and are on low stream terraces, upland flats, and flood plains.

Typical pedon of Quitman fine sandy loam; in a pasture 2 miles east of Sandersville, 1/4 mile south of Florence Church, 1/2 mile east on a county road, and 100 feet north of the roadway, NE1/4SE1/4 sec. 34, T. 10 N., R. 10 W.

Ap—0 to 4 inches; dark gray (10YR 4/1) fine sandy loam; weak medium granular structure; friable; common fine and medium roots; medium acid; abrupt smooth boundary.
E—4 to 8 inches; light olive brown (2.5Y 5/4) fine sandy loam; weak fine granular structure; friable; common fine roots; very strongly acid; gradual smooth boundary.
Bt—8 to 19 inches; yellowish brown (10YR 5/4) loam; common medium faint yellowish brown (10YR 5/6) mottles and few fine faint light brownish gray mottles; weak medium subangular blocky structure; friable; few fine roots; few clay films on faces of peds; sand grains coated and bridged with clay; very strongly acid; clear smooth boundary.
Btx1—19 to 30 inches; mottled yellowish brown (10YR 5/6), strong brown (7.5YR 5/6), and light brownish gray (10YR 6/2) loam; moderate medium subangular blocky structure; firm, slightly brittle and compact in about 20 percent of the browner part; clay films on faces of peds; sand grains coated and bridged with clay; very strongly acid; gradual wavy boundary.
Btx2—30 to 44 inches; mottled light brownish gray (10YR 6/2), strong brown (7.5YR 5/6), and yellowish brown (10YR 5/4) loam; moderate fine subangular blocky structure; firm, slightly brittle and compact in the browner part; few patchy clay films on faces of peds; sand grains coated and bridged with clay; very strongly acid; gradual wavy boundary.
Btgx—44 to 60 inches; light brownish gray (10YR 6/2) sandy clay loam; many fine and medium distinct yellowish brown (10YR 5/6) mottles and few fine distinct yellowish red (5YR 5/6) mottles; moderate medium subangular blocky structure; firm, slightly brittle and compact in the browner part; plastic when wet; few patchy clay films on faces of peds; very strongly acid.

Thickness of the solum is more than 60 inches. Reaction is very strongly acid or strongly acid throughout except where the surface has been limed.

The Ap horizon has hue of 2.5Y or 10YR, value of 3 to 5, and chroma of 1 to 4.

The E horizon has hue of 10YR or 2.5Y, value of 4 to 6, and chroma of 2 to 4. It is fine sandy loam or loam.

The Bt1 horizon has hue of 10YR, 7.5YR, or 2.5Y, value of 5 or 6, chroma of 4 to 6. If present, mottles that have chroma of 2 or less and are in shades of brown are few to many. The Bt1 horizon is fine sandy loam, loam, or sandy clay loam. The upper 20 inches of the Bt horizon is 18 to 32 percent clay content. The lower part of the Bt horizon has hue of 10YR, 2.5Y, or 5Y, value of 4 to 6, and chroma of 2 or 4 and common to many mottles in shades of gray, yellow, red, or brown; or it is mottled in these colors. Texture is clay loam, sandy clay loam, or loam. About 10 to 20 percent of the lower part of the B horizon is brittle and compact and restricts root penetration in the browner part.

Ruston Series

The Ruston series consists of well drained soils that formed in loamy marine sediment on uplands. Slopes range from 0 to 8 percent. The soils of the Ruston series are fine-loamy, siliceous, thermic Typic Paleudults.

Ruston soils are associated with Benndale, Heidel, Savannah, and Smithdale soils. Well drained Benndale soils are on uplands and terraces, and Heidel soils on uplands. These soils have a coarse-loamy control section. Moderately well drained Savannah soils are on uplands and have a fragipan. Well drained Smithdale soils are on uplands and have a significant decrease in clay content in the lower part of the Bt horizon.

Typical pedon of Ruston fine sandy loam, 2 to 5 percent slopes; in a cultivated field 0.25 mile southeast of the Sandersville interchange off Interstate 59, NE1/4NW1/4 sec. 1, T. 9 N., R. 11 W.

Ap—0 to 10 inches; yellowish brown (10YR 5/4) fine sandy loam; weak fine granular structure; friable; many fine roots; medium acid; clear smooth boundary.
Bt1—10 to 18 inches; yellowish red (5YR 4/6) sandy clay loam; moderate fine and medium subangular blocky structure; friable; many fine roots; sand grains coated and bridged with clay; few patchy clay films on faces of peds; strongly acid; gradual wavy boundary.
Bt2—18 to 24 inches; red (2.5YR 4/8) sandy clay loam; moderate fine and medium subangular blocky structure; friable; sand grains coated and bridged with clay; few patchy clay films on faces of peds; strongly acid; gradual wavy boundary.
Bt3—24 to 39 inches; yellowish red (5YR 5/6) sandy loam; weak medium subangular blocky structure; friable; few patchy clay films on faces of peds; strongly acid; gradual wavy boundary.
B/E—39 to 51 inches; yellowish red (5YR 5/8) fine sandy loam (B); weak medium subangular blocky structure; friable; few fine roots; pockets of light yellowish brown (10YR 6/4) sandy loam (E); few thin clay films on faces of peds; areas of uncoated sand; strongly acid; gradual wavy boundary.
B't—51 to 60 inches; red (2.5YR 4/8) sandy clay loam; moderate medium subangular blocky structure; friable; sand grains coated and bridged with clay; strongly acid.

Thickness of the solum is more than 60 inches. Reaction is very strongly acid or strongly acid throughout except where the surface has been limed.

The A horizon has hue of 10YR or 7.5YR, value of 4 or 5, and chroma of 3 or 4.

The Bt horizon has hue of 2.5YR or 5YR, value of 4 or 5, and chroma of 4 to 8. It is sandy clay loam, fine sandy loam, loam, or clay loam. The upper 20 inches of the Bt horizon is 18 to 30 percent clay content. In the B/E horizon, the E part occurs as streaks and pockets in shades of brown and has areas of uncoated sand grains.

The B't horizon has the same colors as the Bt horizon and, if present, mottles are few to many in shades of brown, red, or gray. The B't horizon is sandy clay loam, sandy loam, loam, or clay loam.

Savannah Series

The Savannah series consists of moderately well drained soils that formed in loamy marine and fluvial terrace deposits on uplands and terraces. Slopes range from 0 to 8 percent. The soils of the Savannah series are fine-loamy, siliceous, thermic Typic Fragiudults.

Savannah soils are associated with Freest, Lucedale, Malbis, McLaurin, Ruston, and Smithdale soils. None of these associated soils have a fragipan. Lucedale, McLaurin, Ruston, and Smithdale soils are well drained and have a yellowish red or red Bt horizon. Lucedale and Ruston soils are on uplands that have low relief. McLaurin soils have convex slopes and are mainly on upper hillsides and ridgecrests. Smithdale soils are on steeper hillsides. Moderately well drained Freest and Malbis soils are in similar upland positions as the Savannah soils. The Freest soils have high clay content in the lower part of the B horizon. Malbis soils have more than 5 percent plinthite nodules in the lower part of the B horizon.

Typical pedon of Savannah loam, 2 to 5 percent slopes; in a wooded area 3 miles southwest of Shelton, on a paved county road, 100 feet east of an intersection, 30 feet north of the road, 6 miles west of Eastabuchie, and 3 miles west of Pine Belt Regional Airport, NE1/4SW1/4 sec. 26, T. 6 N., R. 14 W.

Ap—0 to 6 inches; brown (10YR 4/3) loam; weak medium granular structure; friable; many fine roots; very strongly acid; abrupt smooth boundary.

E—6 to 8 inches; yellowish brown (10YR 5/4) loam; few brown (10YR 4/3) worm casts; weak medium granular structure; friable; many fine roots; very strongly acid; clear smooth boundary.

Bt1—8 to 12 inches; yellowish brown (10YR 5/6) loam; weak medium subangular blocky structure; friable; few patchy clay films on faces of peds; very strongly acid; gradual wavy boundary.

Bt2—12 to 21 inches; yellowish brown (10YR 5/6) loam; common medium faint strong brown (7.5YR 5/6) mottles; weak medium angular and subangular blocky structure; friable; patchy clay films on faces of peds; very strongly acid; gradual wavy boundary.

Btx1—21 to 41 inches; mottled yellowish brown (10YR 5/6), brownish yellow (10YR 6/6), light gray (10YR 7/1), and strong brown (7.5YR 5/6) loam; weak coarse prismatic structure parting to moderate medium angular and subangular blocky; firm, more than 70 percent, by volume, compact and brittle; polygonal cracks filled with coarser and less firm gray material; patchy clay films on faces of peds; pockets of uncoated sand grains; very strongly acid; gradual wavy boundary.

Btx2—41 to 62 inches; mottled strong brown (7.5YR 5/6) and light gray (10YR 7/2) loam; weak coarse prismatic structure parting to weak medium angular blocky; more than 60 percent, by volume, firm, compact and brittle; less firm gray clay loam in cracks; patchy clay films on faces of peds; many fine voids; uncoated sand grains in seams between prisms; very strongly acid.

Thickness of the solum ranges from 60 inches to more than 80 inches. Reaction is very strongly acid or strongly acid throughout. Depth to fragipan ranges from 18 to 37 inches.

The A and E horizons have hue of 10YR, value of 4, and chroma of 2 or 3; value of 5 and chroma of 3 to 6; value of 6 and chroma of 3; or value of 3 and chroma of 2.

The Bt horizon has hue of 10YR, value of 5, and chroma of 4 to 8; or it has hue of 7.5YR, value of 5, and chroma of 6. It is loam, clay loam, or sandy clay loam.

The Bx horizon has hue of 10YR, value of 5, and chroma of 4 to 8; hue of 7.5YR, value of 5, and chroma of 8 and grayish mottles; or it is mottled in shades of brown, yellow, gray, and red. It is loam or sandy loam. The upper 20 inches of the Bt horizon is 18 to 28 percent clay content.

Smithdale Series

The Smithdale series consists of well drained soils that formed in loamy marine sediment on uplands. Slopes range from 8 to 15 percent. The soils of the Smithdale series are fine-loamy, siliceous, thermic Typic Hapludults.

Smithdale soils are associated with Heidel, McLaurin, Ruston, and Savannah soils. Well drained Heidel soils are coarse-loamy in the control section and are on upland hillsides. Well drained McLaurin and Ruston soils and moderately well drained Savannah soils are on uplands. McLaurin and Ruston soils have a bisequum; McLaurin soils are coarse-loamy in the control section; and moderately well drained Savannah soils have a fragipan.

Typical pedon of Smithdale fine sandy loam, 8 to 15 percent slopes; in a wooded area 0.5 mile northeast of the intersection of Moselle-Ovett Road and State Highway 29, NW1/4NE1/4 sec. 22, T. 6 N., R. 11 W.

A—0 to 3 inches; brown (10YR 4/3) fine sandy loam; weak medium granular structure; very friable; many

fine and medium roots; very strongly acid; clear smooth boundary.

E—3 to 6 inches; yellowish brown (10YR 5/4) fine sandy loam; weak medium granular structure; very friable; many fine and medium roots; very strongly acid; clear smooth boundary.

Bt1—6 to 18 inches; yellowish red (5YR 4/8) sandy clay loam; many medium distinct red (2.5YR 4/8) mottles; moderate medium subangular blocky structure; friable; many fine roots; clay films on faces of peds; very strongly acid; gradual wavy boundary.

Bt2—18 to 26 inches; red (2.5YR 4/8) sandy clay loam; common medium distinct yellowish red (5YR 4/8) mottles; moderate medium subangular and angular blocky structure; friable; few fine roots; clay films on faces of peds; very strongly acid; gradual wavy boundary.

Bt3—26 to 53 inches; red (2.5YR 4/8) sandy clay loam; common medium distinct strong brown (7.5YR 5/8) mottles; moderate medium angular and subangular blocky structure; friable; clay films on faces of peds; common pockets of pale brown sand grains; very strongly acid; gradual wavy boundary.

Bt4—53 to 68 inches; red (2.5YR 4/8) loam; weak medium subangular blocky structure; friable; sand grains coated and bridged with clay; few patchy clay films on faces of peds; common pockets of pale brown sand grains; very strongly acid.

Thickness of the solum is more than 60 inches. Reaction is very strongly acid or strongly acid throughout except where the surface layer has been limed.

The A horizon has hue of 10YR, value of 4, and chroma of 2 or 3.

The E horizon has hue of 10YR, value of 5 or 6, and chroma of 3 or 4. It is fine sandy loam, sandy loam, or loamy sand.

The upper part of the Bt horizon has hue of 2.5YR or 5YR, value of 4 or 5, and chroma of 6 to 8. It is clay loam, loam, or sandy clay loam. In some pedons, the Bt horizon has few to many mottles in shades of red and brown. The lower part of the Bt horizon has the same color range as the upper part and has few to many pockets of pale brown sand grains. It is loam or sandy loam. The upper 20 inches of the Bt horizon is 18 to 33 percent clay content.

Stough Series

The Stough series consists of somewhat poorly drained soils that formed in loamy sediment on stream terraces. Slopes range from 0 to 2 percent. The soils of the Stough series are coarse-loamy, siliceous, thermic Fragiaquic Paleudults.

Stough soils are associated with Annemaine, Bibb, Prentiss, and Trebloc soils. Moderately well drained Annemaine soils are clayey in the control section and are on low stream terraces bordering flood plains. Poorly drained Bibb soils are stratified and are on flood plains. Moderately well drained Prentiss soils have a fragipan, and they are on stream terraces. Poorly drained Trebloc soils are fine-silty in the control section, and they are on low stream terraces, flood plains, and upland flats.

Typical pedon of Stough fine sandy loam, 0 to 2 percent slopes; near Moselle, 1,500 feet west of County Barn along a gravel road, 40 feet south of the gravel road, SW1/4SE1/4 sec. 3, T. 6 N., R. 13 W.

A—0 to 5 inches; dark grayish brown (10YR 4/2) fine sandy loam; weak medium granular structure; friable; many fine roots; very strongly acid; clear smooth boundary.

E—5 to 7 inches; light yellowish brown (10YR 6/4) fine sandy loam; weak medium granular structure; friable; many fine and medium roots; very strongly acid; clear smooth boundary.

Bt—7 to 14 inches; light yellowish brown (10YR 6/4) loam; many medium distinct strong brown (7.5YR 5/8) and few light gray (10YR 6/1) mottles; weak medium subangular blocky structure; friable; many fine roots; sand grains bridged and coated with clay; very strongly acid; gradual irregular boundary.

Btx1—14 to 36 inches; mottled light yellowish brown (10YR 6/4), yellowish brown (10YR 5/6), light brownish gray (10YR 6/2), and strong brown (7.5YR 5/6) loam; weak coarse prismatic structure parting to weak medium subangular blocky; about 50 percent, by volume, firm, slightly compact and brittle; sand grains coated and bridged with clay; patchy clay films on faces of peds; very strongly acid; gradual wavy boundary.

Btx2—36 to 60 inches; mottled gray (10YR 6/1) and yellowish brown (10YR 5/6) loam; weak coarse prismatic structure parting to weak medium subangular blocky; about 40 percent, by volume, firm, slightly compact and brittle; patchy clay films on faces of peds; very strongly acid.

Thickness of the solum is more than 60 inches. Reaction is very strongly acid or strongly acid throughout except where the surface layer has been limed.

The A horizon has hue of 10YR, value of 3 or 4, and chroma of 1 or 2.

The E horizon, if present, has hue of 10YR, value of 6, and chroma of 2 to 4.

The Bt horizon has hue of 10YR or 2.5Y, value of 4 to 6, and chroma of 4 to 6 and has few to many mottles having chroma of 2 or less; or it is mottled in shades of gray and brown. It is fine sandy loam, loam, or sandy loam.

The Btx horizon has hue of 10YR or 2.5Y, value of 4 to 6, and chroma of 4 to 6 and has few to many mottles having chroma of 2 or less; or it is mottled in shades of brown, gray, or red. The browner part, about 40 to 55

percent, by volume, is brittle and compact and restricts root penetration. The Btx horizon is sandy loam, loam, or sandy clay loam.

Susquehanna Series

The Susquehanna series consists of somewhat poorly drained soils that formed in clayey marine sediment on uplands. Slopes range from 2 to 15 percent. The soils of the Susquehanna series are fine, montmorillonitic, thermic Vertic Paleudalfs.

Susquehanna soils are associated with Freest, Malbis, and Petal soils. Freest, Malbis, and Petal soils are moderately well drained, fine-loamy in the control section, and on uplands. Malbis soils have more than 5 percent plinthite in the lower part of the Bt horizon.

Typical pedon of Susquehanna fine sandy loam, in an area of Susquehanna-Petal association, rolling; in a wooded area 8.8 miles east of Moselle on Moselle-Ovett Road, south 0.8 mile on a gravel road, and 500 feet northeast along the powerline right-of-way, SW1/4SW1/4 sec. 19, T. 6 N., R. 11 W.

A—0 to 5 inches; dark gray (10YR 4/1) fine sandy loam; weak medium granular structure; friable; many fine roots; very strongly acid; clear smooth boundary.

E—5 to 12 inches; pale brown (10YR 6/3) fine sandy loam; few fine faint light yellowish brown mottles; weak fine granular structure; friable; many fine roots; very strongly acid; clear smooth boundary.

Bt1—12 to 19 inches; red (2.5YR 4/6) clay; many medium prominent yellowish brown (10YR 5/4) mottles and few fine distinct brownish gray (10YR 6/2) mottles; moderate fine angular blocky structure; firm, plastic; many fine roots; patchy clay films on faces of peds and yellowish brown coatings on surfaces; very strongly acid; gradual wavy boundary.

Bt2—19 to 26 inches; mottled light gray (10YR 7/2), red (2.5YR 4/6), and yellowish brown (10YR 5/6) clay; moderate fine angular blocky structure; firm, plastic; patchy clay films on faces of peds; strongly acid; gradual wavy boundary.

Btg1—26 to 41 inches; light brownish gray (2.5Y 6/2) clay; common medium prominent red (10R 4/8) mottles and common medium distinct strong brown (7.5YR 5/8) mottles; moderate fine angular blocky structure; firm, plastic; patchy clay films on faces of peds; very strongly acid; gradual wavy boundary.

Btg2—41 to 64 inches; light brownish gray (2.5Y 6/2) silty clay; common coarse faint light yellowish brown (10YR 6/4) mottles and few medium distinct strong brown (7.5YR 5/8) mottles; moderate medium angular blocky structure; firm, plastic; patchy clay films on faces of peds; very strongly acid.

Thickness of the solum is more than 60 inches, and the argillic horizon is more than 50 inches thick. Reaction is very strongly acid or strongly acid throughout except where the surface layer has been limed.

The A horizon has hue of 10YR, value of 3 to 5, and chroma of 1 or 2.

The E horizon, if present, has hue of 10YR or 7.5YR, value of 5 or 6, and chroma of 2 to 4. It is fine sandy loam, sandy loam, or loam.

The Bt horizon has hue of 2.5YR to 7.5YR, value of 4 to 6, and chroma of 3 to 8; or it is mottled in shades of gray, red, and yellow. Few to many mottles having chroma of 2 or less are in the upper 10 inches of the horizon. The Btg horizon has a gray matrix that is mottled in shades of gray, red, brown, or yellow; or it is mottled in these colors. The Bt horizons are clay loam, silty clay, or clay. The upper 20 inches of the Bt horizon is from 35 to 60 percent clay content.

Trebloc Series

The Trebloc series consists of poorly drained soils that formed in moderately fine textured alluvial sediment on upland flats, stream terraces, and flood plains. Slopes are 0 to 2 percent. The soils of the Trebloc series are fine-silty, siliceous, thermic Typic Paleaquults.

Trebloc soils are associated with the nearly level to gently sloping Bibb, Prentiss, Quitman, and Stough soils on low terraces and flood plains. Poorly drained Bibb soils are coarse-loamy in the control section and are on flood plains. Moderately well drained Prentiss soils have a fragipan, are coarse-loamy in the control section, and are in slightly higher positions on stream terraces than Trebloc soils. Moderately well drained Quitman soils are fine-loamy in the control section and are on low terraces bordering flood plains. Somewhat poorly drained Stough soils are coarse-loamy in the control section and are in similar to slightly higher positions on stream terraces than Trebloc soils.

Typical pedon of Trebloc silt loam; in a wooded area 1 mile northeast of U.S. Highway 11 along a local road at Eastabuchie and 120 feet west of county road, NE1/4SW1/4 sec. 35, T. 6 N., R. 13 W.

A—0 to 4 inches; very dark gray (10YR 3/1) silt loam; weak medium granular structure; friable; common fine and medium roots; strongly acid; clear smooth boundary.

E—4 to 9 inches; light brownish gray (10YR 6/2) silt loam; few medium faint light yellowish brown (10YR 6/4) mottles; weak medium granular structure; friable; common fine roots; strongly acid; clear smooth boundary.

Btg1—9 to 25 inches; light brownish gray (10YR 6/2) silty clay loam; common medium distinct light yellowish brown (10YR 6/4) mottles and few coarse faint yellowish brown (10YR 5/6) mottles; moderate medium subangular blocky structure; firm, plastic; few fine roots; few patchy clay films on faces of

peds; few fine black concretions; strongly acid; gradual smooth boundary.

Btg2—25 to 35 inches; light brownish gray (10YR 6/2) silty clay loam; common coarse distinct yellowish brown (10YR 5/6) mottles and common medium distinct strong brown (7.5YR 5/6) mottles; moderate medium subangular blocky structure; firm; patchy clay films on faces of peds; strongly acid; gradual smooth boundary.

Btg3—35 to 60 inches; light brownish gray (10YR 6/2) silty clay loam; common coarse distinct brownish yellow (10YR 6/6) mottles; moderate coarse angular blocky structure; firm; patchy clay films on faces of peds; strongly acid.

Thickness of the solum is more than 60 inches. Reaction is very strongly acid or strongly acid throughout except where the surface layer has been limed.

The A horizon has hue of 10YR, value of 3 to 5, and chroma of 1 or 2.

The E horizon, if present, has hue of 10YR, value of 5 or 6, and chroma of 1 or 2. It is fine sandy loam, loam, or silt loam. In some pedons plowing has mixed the A and E horizons.

The upper part of the Btg horizon has hue of 10YR, value of 5 to 7, and chroma of 1 or 2. Mottles in shades of yellow and brown range from few to many. The lower part of the Btg horizon has the same range of colors, or it is mottled in shades of brown, gray, and yellow. The upper part of the Btg horizon is silt loam or silty clay loam. The lower part is silty clay loam or silty clay. The upper 20 inches of the Btg horizon is from 20 to 32 percent clay content and from 35 to 55 percent silt. Black concretions, if present, are few to many.

Formation of the Soils

This section discusses the major factors and processes that have affected the formation and morphology of the soils of Jones County. Soil, as used in this discussion, is a natural, three-dimensional body at the earth's surface. It is capable of supporting plants and has properties resulting from the integrated effect of climate and living matter acting on earthly parent material, as conditioned by relief over periods of time.

Soils are formed through the interaction of five major factors: climate, plant and animal life, parent material, relief, and time. The relative influence of each factor varies from place to place, and in some places one factor dominates in the formation of a soil and determines most of its properties. Local variation in soils in Jones County is caused mainly by differences in parent material, relief, and time as well as the effects of man.

In the urban areas of Laurel, the influence of man on soils has been great. For example, with bulldozers and other earthmoving equipment, man has altered and modified soils.

Climate

Jones County has a moist, temperate climate that is characteristic of the southeastern United States. Summers are hot, and winters are cool and fairly short. Annual precipitation is about 56 inches. Annual snowfall is less than 0.6 inch. Average annual temperature is about 64.9 degrees F.

The generally moist climate has caused strong weathering of the soils. Almost all of the soils are acid. Weathering and leaching have left the natural level of plant nutrients low in most of the soils.

Plant and Animal Life

All living organisms, including vegetation, bacteria and fungi, and animals, are important to soil formation. Vegetation generally supplies organic matter that decomposes and gives a darker color to soil surface horizons. Bacteria and fungi are responsible for decomposing vegetation and returning nutrients to the soil. Many of the organic reactions and processes of the bacteria and fungi release materials that affect the soil-forming processes. Burrowing animals, earthworms, ants, cicada, and other insects mix soils and affect soil structure as well as make the soils more open and porous for movement of air and water.

Man also affects soil structure and makes soils more porous in places by tillage and management practices. In other instances, however, man compacts the soils and makes them more dense by foot and vehicle traffic. Man's intensive use and disturbance of some soils has caused accelerated soil erosion losses, often accompanied by increased deposition on flood plains and in depressional areas. Man has also altered many soils chemically through the application of limestone and fertilizer, which makes the soils more productive for most plants. Man has introduced plants and animals not normally found in this area, and these will eventually affect the soil.

Parent Material

Parent material is material from which soils form. It influences the mineral and chemical composition of the soil and, to a large extent, the rate at which soil formation takes place. Except for a few square miles in the extreme northeast corner that is part of the Vicksburg Hills Physiographic Province, Jones County forms part of the extensive Piney Woods Physiographic Province.

Soils on uplands formed in coastal plain sediments, and soils on low terraces and flood plains formed in alluvium, which is recent materials washed from the uplands. The soils on uplands are formed from materials of the Vicksburg Group (Oligocene), the Catahoula Formation (Miocene), the Hattiesburg Formation (Miocene), and the Citronelle Formation (Miocene to Early Quaternary).

Relief

Relief, or shape of the landscape, influences soil formation. It controls surface drainage and affects the percolation of water through the soil. Relief often affects the depth of soil, the plant and animal life, and some of the soil-forming processes. Soils on steeper slopes are more subject to erosion because of concentrated, rapid runoff. Soils in depressional areas are generally wet; soils on higher convex surfaces are better drained. Differences in topography cause free water to leave the

well drained soils and to accumulate in the poorly drained soils.

The relief in Jones County ranges from nearly level to steep. Slopes range from 0 to about 20 percent.

Time

A long period of time is required for soil formation. The ages of different soils account for most of the soil differences that are not attributed to other factors of soil formation. Soils along the streams are the youngest in the county. Older soils have a greater degree of horizon differentiation than the young soils. The soils on uplands are the oldest in the county. Most of the soils that formed on the smoother parts of the uplands and on older stream terraces have a well defined soil profile. These soils have a B horizon that has an accumulation of silicate clay.

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Glossary

ABC soil. A soil having an A, a B, and a C horizon.

AC soil. A soil having only an A and a C horizon. Commonly such soil formed in recent alluvium or on steep rocky slopes.

Aeration, soil. The exchange of air in soil with air from the atmosphere. The air in a well-aerated soil is similar to that in the atmosphere; the air in a poorly aerated soil is considerably higher in carbon dioxide and lower in oxygen.

Aggregate, soil. Many fine particles held in a single mass or cluster. Natural soil aggregates, such as granules, blocks, or prisms, are called peds. Clods are aggregates produced by tillage or logging.

Alkali (sodic) soil. Soil having so high a degree of alkalinity (pH 8.5 or higher), or so high a percentage of exchangeable sodium (15 percent or more of the total exchangeable bases), or both, that plant growth is restricted.

Alluvium. Material, such as sand, silt, or clay, deposited on land by streams.

Association, soil. A group of soils geographically associated in a characteristic repeating pattern and defined and delineated as a single map unit.

Available water capacity (available moisture capacity). The capacity of soils to hold water available for use by most plants. It is commonly defined as the difference between the amount of soil water at field moisture capacity and the amount at wilting point. It is commonly expressed as inches of water per inch of soil. The capacity, in inches, in a 60-inch profile or to a limiting layer is expressed as—

	Inches
Very low	0 to 3
Low	3 to 6
Moderate	6 to 9
High	9 to 12
Very high	more than 12

Base saturation. The degree to which material having cation-exchange properties is saturated with exchangeable bases (sum of Ca, Mg, Na, K), expressed as a percentage of the total cation-exchange capacity.

Bedding planes. Fine stratifications, less than 5 millimeters thick, in unconsolidated alluvial, eolian, lacustrine, or marine sediments.

Bedrock. The solid rock that underlies the soil and other unconsolidated material or that is exposed at the surface.

Bisequum. Two sequences of soil horizons, each of which consists of an illuvial horizon and the overlying eluvial horizons.

Bottom land. The normal flood plain of a stream, subject to flooding.

Broad-base terrace. A ridge-type terrace built to control erosion by diverting runoff along the contour at a nonscouring velocity. The terrace is 10 to 20 inches high and 15 to 30 feet wide and has gently sloping sides, a rounded crown, and a dish-shaped channel along the upper side. It may be nearly level or have a grade toward one or both ends.

Capillary water. Water held as a film around soil particles and in tiny spaces between particles. Surface tension is the adhesive force that holds capillary water in the soil.

Cation. An ion carrying a positive charge of electricity. The common soil cations are calcium, potassium, magnesium, sodium, and hydrogen.

Cation-exchange capacity. The total amount of exchangeable cations that can be held by the soil, expressed in terms of milliequivalents per 100 grams of soil at neutrality (pH 7.0) or at some other stated pH value. The term, as applied to soils, is synonymous with base-exchange capacity, but is more precise in meaning.

Chiseling. Tillage with an implement having one or more soil-penetrating points that shatter or loosen hard compacted layers to a depth below normal plow depth.

Clay. As a soil separate, the mineral soil particles less than 0.002 millimeter in diameter. As a soil textural class, soil material that is 40 percent or more clay, less than 45 percent sand, and less than 40 percent silt.

Clay film. A thin coating of oriented clay on the surface of a soil aggregate or lining pores or root channels. Synonyms: clay coating, clay skin.

Coarse fragments. If round, mineral or rock particles 2 millimeters to 25 centimeters (10 inches) in diameter; if flat, mineral or rock particles (flagstone) 15 to 38 centimeters (6 to 15 inches) long.

Coarse textured soil. Sand or loamy sand.

Complex slope. Irregular or variable slope. Planning or constructing terraces, diversions, and other water-control measures on a complex slope is difficult.

Complex, soil. A map unit of two or more kinds of soil in such an intricate pattern or so small in area that it is not practical to map them separately at the selected scale of mapping. The pattern and proportion of the soils are somewhat similar in all areas.

Concretions. Grains, pellets, or nodules of various sizes, shapes, and colors consisting of concentrated compounds or cemented soil grains. The composition of most concretions is unlike that of the surrounding soil. Calcium carbonate and iron oxide are common compounds in concretions.

Conservation tillage. A tillage system that does not invert the soil and that leaves a protective amount of crop residue on the surface throughout the year.

Consistence, soil. The feel of the soil and the ease with which a lump can be crushed by the fingers. Terms commonly used to describe consistence are—

Loose.—Noncoherent when dry or moist; does not hold together in a mass.

Friable.—When moist, crushes easily under gentle pressure between thumb and forefinger and can be pressed together into a lump.

Firm.—When moist, crushes under moderate pressure between thumb and forefinger, but resistance is distinctly noticeable.

Plastic.—When wet, readily deformed by moderate pressure but can be pressed into a lump; will form a "wire" when rolled between thumb and forefinger.

Sticky.—When wet, adheres to other material and tends to stretch somewhat and pull apart rather than to pull free from other material.

Hard.—When dry, moderately resistant to pressure; can be broken with difficulty between thumb and forefinger.

Soft.—When dry, breaks into powder or individual grains under very slight pressure.

Cemented.—Hard; little affected by moistening.

Contour stripcropping. Growing crops in strips that follow the contour. Strips of grass or close-growing crops are alternated with strips of clean-tilled crops or summer fallow.

Control section. The part of the soil on which classification is based. The thickness varies among different kinds of soil, but for many it is that part of the soil profile between depths of 10 inches and 40 or 80 inches.

Corrosive. High risk of corrosion to uncoated steel or deterioration of concrete.

Cover crop. A close-growing crop grown primarily to improve and protect the soil between periods of regular crop production, or a crop grown between trees and vines in orchards and vineyards.

Cutbanks cave (in tables). The walls of excavations tend to cave in or slough.

Decreasers. The most heavily grazed climax range plants. Because they are the most palatable, they are the first to be destroyed by overgrazing.

Deferred grazing. Postponing grazing or resting grazingland for a prescribed period.

Depth to rock (in tables). Bedrock is too near the surface for the specified use.

Diversion (or diversion terrace). A ridge of earth, generally a terrace, built to protect downslope areas by diverting runoff from its natural course.

Drainage class (natural). Refers to the frequency and duration of periods of saturation or partial saturation during soil formation, as opposed to altered drainage, which is commonly the result of artificial drainage or irrigation but may be caused by the sudden deepening of channels or the blocking of drainage outlets. Seven classes of natural soil drainage are recognized:

Excessively drained.—Water is removed from the soil very rapidly. Excessively drained soils are commonly very coarse textured, rocky, or shallow. Some are steep. All are free of the mottling related to wetness.

Somewhat excessively drained.—Water is removed from the soil rapidly. Many somewhat excessively drained soils are sandy and rapidly pervious. Some are shallow. Some are so steep that much of the water they receive is lost as runoff. All are free of the mottling related to wetness.

Well drained.—Water is removed from the soil readily, but not rapidly. It is available to plants throughout most of the growing season, and wetness does not inhibit growth of roots for significant periods during most growing seasons. Well drained soils are commonly medium textured. They are mainly free of mottling.

Moderately well drained.—Water is removed from the soil somewhat slowly during some periods. Moderately well drained soils are wet for only a short time during the growing season, but periodically they are wet long enough that most mesophytic crops are affected. They commonly have a slowly pervious layer within or directly below the solum, or periodically receive high rainfall, or both.

Somewhat poorly drained.—Water is removed slowly enough that the soil is wet for significant periods during the growing season. Wetness markedly restricts the growth of mesophytic crops unless artificial drainage is provided. Somewhat poorly drained soils commonly have a slowly pervious layer, a high water table, additional water from seepage, nearly continuous rainfall, or a combination of these.

Poorly drained.—Water is removed so slowly that the soil is saturated periodically during the growing season or remains wet for long periods. Free water

is commonly at or near the surface for long enough during the growing season that most mesophytic crops cannot be grown unless the soil is artificially drained. The soil is not continuously saturated in layers directly below plow depth. Poor drainage results from a high water table, a slowly pervious layer within the profile, seepage, nearly continuous rainfall, or a combination of these.

Very poorly drained.—Water is removed from the soil so slowly that free water remains at or on the surface during most of the growing season. Unless the soil is artificially drained, most mesophytic crops cannot be grown. Very poorly drained soils are commonly level or depressed and are frequently ponded. Yet, where rainfall is high and nearly continuous, they can have moderate or high slope gradients.

Drainage, surface. Runoff, or surface flow of water, from an area.

Eluviation. The movement of material in true solution or colloidal suspension from one place to another within the soil. Soil horizons that have lost material through eluviation are eluvial; those that have received material are illuvial.

Erosion. The wearing away of the land surface by water, wind, ice, or other geologic agents and by such processes as gravitational creep.

Erosion (geologic). Erosion caused by geologic processes acting over long geologic periods and resulting in the wearing away of mountains and the building up of such landscape features as flood plains and coastal plains. Synonym: natural erosion.

Erosion (accelerated). Erosion much more rapid than geologic erosion, mainly as a result of the activities of man or other animals or of a catastrophe in nature, such as fire, that exposes the surface.

Excess sodium (in tables). Excess exchangeable sodium is in the soil. The resulting poor physical properties restrict the growth of plants.

Excess fines (in tables). Excess silt and clay are in the soil. The soil is not a source of gravel or sand for construction purposes.

Fertility, soil. The quality that enables a soil to provide plant nutrients, in adequate amounts and in proper balance, for the growth of specified plants when light, moisture, temperature, tilth, and other growth factors are favorable.

Field moisture capacity. The moisture content of a soil, expressed as a percentage of the ovendry weight, after the gravitational, or free, water has drained away; the field moisture content 2 or 3 days after a soaking rain; also called *normal field capacity, normal moisture capacity,* or *capillary capacity*.

Fine textured soil. Sandy clay, silty clay, and clay.

First bottom. The normal flood plain of a stream, subject to frequent or occasional flooding.

Flood plain. A nearly level alluvial plain that borders a stream and is subject to flooding unless protected artificially.

Fragipan. A loamy, brittle subsurface horizon low in porosity and content of organic matter and low or moderate in clay but high in silt or very fine sand. A fragipan appears cemented and restricts roots. When dry, it is hard or very hard and has a higher bulk density than the horizon or horizons above. When moist, it tends to rupture suddenly under pressure rather than to deform slowly.

Genesis, soil. The mode of origin of the soil. Refers especially to the processes or soil-forming factors responsible for the formation of the solum, or true soil, from the unconsolidated parent material.

Gleyed soil. Soil that formed under poor drainage, resulting in the reduction of iron and other elements in the profile and in gray colors and mottles.

Graded stripcropping. Growing crops in strips that grade toward a protected waterway.

Grassed waterway. A natural or constructed waterway, typically broad and shallow, seeded to grass as protection against erosion. Conducts surface water away from cropland.

Green-manure crop (agronomy). A soil-improving crop grown to be plowed under in an early stage of maturity or soon after maturity.

Gully. A miniature valley with steep sides cut by running water and through which water ordinarily runs only after rainfall. The distinction between a gully and a rill is one of depth. A gully generally is an obstacle to farm machinery and is too deep to be obliterated by ordinary tillage; a rill is of lesser depth and can be smoothed over by ordinary tillage.

Horizon, soil. A layer of soil, approximately parallel to the surface, having distinct characteristics produced by soil-forming processes. In the identification of soil horizons, an upper case letter represents the major horizons. Numbers or lower case letters that follow represent subdivisions of the major horizons. An explanation of the subdivisions is given in the *Soil Survey Manual*. The major horizons of mineral soil are as follows:

O horizon.—An organic layer of fresh and decaying plant residue at the surface of a mineral soil.

A horizon.—The mineral horizon at or near the surface in which an accumulation of humified organic matter is mixed with the mineral material. Also, a plowed surface horizon, most of which was originally part of a B horizon.

E horizon.—The mineral horizon in which the main feature is loss of silicate clay, iron, aluminum, or some combination of these.

B horizon.—The mineral horizon below an O, A, or E horizon. The B horizon is, in part, a layer of transition from the overlying horizon to the underlying C horizon. The B horizon also has

distinctive characteristics, such as accumulation of clay, sesquioxides, humus, or a combination of these; prismatic or blocky structure; redder or browner colors than those in the A horizon; or a combination of these. The combined A and B horizons are generally called the solum, or true soil. If a soil does not have a B horizon, the A horizon alone is the solum.

C horizon.—The mineral horizon or layer, excluding indurated bedrock, that is little affected by soil-forming processes and does not have the properties typical of the A or B horizon. The material of a C horizon may be either like or unlike that in which the solum formed. If the material is known to differ from that in the solum, the Arabic numeral 2 precedes the letter C.

R layer.—Consolidated rock (unweathered bedrock) beneath the soil. The rock commonly underlies a C horizon, but can be directly below an A or a B horizon.

Humus. The well decomposed, more or less stable part of the organic matter in mineral soils.

Hydrologic soil groups. Refers to soils grouped according to their runoff-producing characteristics. The chief consideration is the inherent capacity of soil bare of vegetation to permit infiltration. The slope and the kind of plant cover are not considered but are separate factors in predicting runoff. Soils are assigned to four groups. In group A are soils having a high infiltration rate when thoroughly wet and having a low runoff potential. They are mainly deep, well drained, and sandy or gravelly. In group D, at the other extreme, are soils having a very slow infiltration rate and thus a high runoff potential. They have a claypan or clay layer at or near the surface, have a permanent high water table, or are shallow over nearly impervious bedrock or other material. A soil is assigned to two hydrologic groups if part of the acreage is artificially drained and part is undrained.

Impervious soil. A soil through which water, air, or roots penetrate slowly or not at all. No soil is absolutely impervious to air and water all the time.

Increasers. Species in the climax vegetation that increase in amount as the more desirable plants are reduced by close grazing. Increasers commonly are the shorter plants and the plants that are the less palatable to livestock.

Infiltration. The downward entry of water into the immediate surface of soil or other material. This contrasts with percolation, which is movement of water through soil layers or material.

Infiltration capacity. The maximum rate at which water can infiltrate into a soil under a given set of conditions.

Infiltration rate. The rate at which water penetrates the surface of the soil at any given instant, usually expressed in inches per hour. The rate can be limited by the infiltration capacity of the soil or the rate at which water is applied at the surface.

Invaders. On range, plants that encroach into an area and grow after the climax vegetation has been reduced by grazing. Generally, invader plants follow disturbance of the surface.

Leaching. The removal of soluble material from soil or other material by percolating water.

Liquid limit. The moisture content at which the soil passes from a plastic to a liquid state.

Loam. Soil material that is 7 to 27 percent clay particles, 28 to 50 percent silt particles, and less than 52 percent sand particles.

Low strength. The soil is not strong enough to support loads.

Medium textured soil. Very fine sandy loam, loam, silt loam, or silt.

Mineral soil. Soil that is mainly mineral material and low in organic material. Its bulk density is more than that of organic soil.

Minimum tillage. Only the tillage essential to crop production and prevention of soil damage.

Miscellaneous area. An area that has little or no natural soil and supports little or no vegetation. Pits are miscellaneous areas.

Moderately coarse textured soil. Sandy loam and fine sandy loam.

Moderately fine textured soil. Clay loam, sandy clay loam, and silty clay loam.

Morphology, soil. The physical makeup of the soil, including the texture, structure, porosity, consistence, color, and other physical, mineral, and biological properties of the various horizons, and the thickness and arrangement of those horizons in the soil profile.

Mottling, soil. Irregular spots of different colors that vary in number and size. Mottling generally indicates poor aeration and impeded drainage. Descriptive terms are as follows: abundance—*few, common,* and *many*; size—*fine, medium,* and *coarse*; and contrast—*faint, distinct,* and *prominent*. The size measurements are of the diameter along the greatest dimension. *Fine* indicates less than 5 millimeters (about 0.2 inch); *medium*, from 5 to 15 millimeters (about 0.2 to 0.6 inch); and *coarse*, more than 15 millimeters (about 0.6 inch).

Munsell notation. A designation of color by degrees of the three simple variables—hue, value, and chroma. For example, a notation of 10YR 6/4 is a color of 10YR hue, value of 6, and chroma of 4.

Neutral soil. A soil having a pH value between 6.6 and 7.3. (See Reaction, soil.)

Nutrient, plant. Any element taken in by a plant essential to its growth. Plant nutrients are mainly nitrogen, phosphorus, potassium, calcium, magnesium, sulfur, iron, manganese, copper, boron,

and zinc obtained from the soil and carbon, hydrogen, and oxygen obtained from the air and water.

Organic matter. Plant and animal residue in the soil in various stages of decomposition.

Pan. A compact, dense layer in a soil that impedes the movement of water and the growth of roots. For example, *hardpan, fragipan, claypan, plowpan,* and *traffic pan.*

Parent material. The unconsoiidated organic and mineral material in which soil forms.

Ped. An individual natural soil aggregate, such as a granule, a prism, or a block.

Pedon. The smallest volume that can be called "a soil." A pedon is three dimensional and large enough to permit study of all horizons. Its area ranges from about 10 to 100 square feet (1 square meter to 10 square meters), depending on the variability of the soil.

Percolation. The downward movement of water through the soil.

Percs slowly (in tables). The slow movement of water through the soil adversely affects the specified use.

Permeability. The quality of the soil that enables water to move downward through the profile. Permeability is measured as the number of inches per hour that water moves downward through the saturated soil. Terms describing permeability are:

Very slow	less than 0.06 inch
Slow	0.06 to 0.2 inch
Moderately slow	0.2 to 0.6 inch
Moderate	0.6 inch to 2.0 inches
Moderately rapid	2.0 to 6.0 inches
Rapid	6.0 to 20 inches
Very rapid	more than 20 inches

Phase, soil. A subdivision of a soil series based on features that affect its use and management. For example, slope, stoniness, and thickness.

pH value. A numerical designation of acidity and alkalinity in soil. (See Reaction, soil.)

Piping (in tables). Subsurface tunnels or pipelike cavities are formed by water moving through the soil.

Plasticity index. The numerical difference between the liquid limit and the plastic limit; the range of moisture content within which the soil remains plastic.

Plastic limit. The moisture content at which a soil changes from semisolid to plastic.

Plowpan. A compacted layer formed in the soil directly below the plowed layer.

Ponding. Standing water on soils in closed depressions. Unless the soils are artificially drained, the water can be removed only by percolation or evapotranspiration.

Poorly graded. Refers to a coarse grained soil or soil material consisting mainly of particles of nearly the same size. Because there is little difference in size of the particles, density can be increased only slightly by compaction.

Poor filter (in tables). Because of rapid permeability, the soil may not adequately filter effluent from a waste disposal system.

Poor outlets (in tables). In these areas, surface or subsurface drainage outlets are difficult or expensive to install.

Productivity, soil. The capability of a soil for producing a specified plant or sequence of plants under specific management.

Profile, soil. A vertical section of the soil extending through all its horizons and into the parent material.

Reaction, soil. A measure of the acidity or alkalinity of a soil expressed in pH values. A soil that tests to pH 7.0 is described as precisely neutral in reaction because it is neither acid nor alkaline. The degree of acidity or alkalinity is expressed as—

	pH
Extremely acid	below 4.5
Very strongly acid	4.5 to 5.0
Strongly acid	5.1 to 5.5
Medium acid	5.6 to 6.0
Slightly acid	6.1 to 6.5
Neutral	6.6 to 7.3
Mildly alkaline	7.4 to 7.8
Moderately alkaline	7.9 to 8.4
Strongly alkaline	8.5 to 9.0
Very strongly alkaline	9.1 and higher

Regolith. The unconsolidated mantle of weathered rock and soil material on the earth's surface; the loose earth material above the solid rock.

Relief. The elevations or inequalities of a land surface, considered collectively.

Rill. A steep sided channel resulting from accelerated erosion. A rill is generally a few inches deep and not wide enough to be an obstacle to farm machinery.

Rippable. Rippable bedrock or hardpan can be excavated using a single-tooth ripping attachment mounted on a tractor with a 200-300 draw bar horsepower rating.

Rock fragments. Rock or mineral fragments having a diameter of 2 millimeters or more; for example, pebbles, cobbles, stones, and boulders.

Rooting depth (in tables). There is a shallow root zone. The soil is shallow over a layer that greatly restricts roots.

Root zone. The part of the soil that can be penetrated by plant roots.

Runoff. The precipitation discharged into stream channels from an area. The water that flows off the surface of the land without sinking into the soil is called surface runoff. Water that enters the soil before reaching surface streams is called ground-water runoff or seepage flow from ground water.

Sand. As a soil separate, individual rock or mineral fragments from 0.05 millimeter to 2.0 millimeters in diameter. Most sand grains consist of quartz. As a soil textural class, a soil that is 85 percent or more sand and not more than 10 percent clay.

Sandstone. Sedimentary rock containing dominantly sand-size particles.

Sedimentary rock. Rock made up of particles deposited from suspension in water. The chief kinds of sedimentary rock are conglomerate, formed from gravel; sandstone, formed from sand; shale, formed from clay; and limestone, formed from soft masses of calcium carbonate. There are many intermediate types. Some wind-deposited sand is consolidated into sandstone.

Seepage (in tables). The movement of water through the soil adversely affects the specified use.

Sequum. A sequence consisting of an illuvial horizon and the overlying eluvial horizon. (See Eluviation.)

Series, soil. A group of soils that have profiles that are almost alike, except for differences in texture of the surface layer or of the underlying material. All the soils of a series have horizons that are similar in composition, thickness, and arrangement.

Shale. Sedimentary rock formed by the hardening of a clay deposit.

Sheet erosion. The removal of a fairly uniform layer of soil material from the land surface by the action of rainfall and surface runoff.

Shrink-swell. The shrinking of soil when dry and the swelling when wet. Shrinking and swelling can damage roads, dams, building foundations, and other structures. It can also damage plant roots.

Silt. As a soil separate, individual mineral particles that range in diameter from the upper limit of clay (0.002 millimeter) to the lower limit of very fine sand (0.05 millimeter). As a soil textural class, soil that is 80 percent or more silt and less than 12 percent clay.

Siltstone. Sedimentary rock made up of dominantly silt-sized particles.

Site index. A designation of the quality of a forest site based on the height of the dominant stand at an arbitrarily chosen age. For example, if the average height attained by dominant and codominant trees in a fully stocked stand at the age of 50 years is 75 feet, the site index is 75 feet.

Slickensides. Polished and grooved surfaces produced by one mass sliding past another. In soils, slickensides may occur at the bases of slip surfaces on the steeper slopes; on faces of blocks, prisms, and columns; and in swelling clayey soils, where there is marked change in moisture content.

Slope. The inclination of the land surface from the horizontal. Percentage of slope is the vertical distance divided by horizontal distance, then multiplied by 100. Thus, a slope of 20 percent is a drop of 20 feet in 100 feet of horizontal distance.

Slope (in tables). Slope is great enough that special practices are required to ensure satisfactory performance of the soil for a specific use.

Slow refill (in tables). The slow filling of ponds, resulting from restricted permeability in the soil.

Soil. A natural, three-dimensional body at the earth's surface. It is capable of supporting plants and has properties resulting from the integrated effect of climate and living matter acting on earthy parent material, as conditioned by relief over periods of time.

Soil separates. Mineral particles less than 2 millimeters in equivalent diameter and ranging between specified size limits. The names and sizes of separates recognized in the United States are as follows:

	Millimeters
Very coarse sand	2.0 to 1.0
Coarse sand	1.0 to 0.5
Medium sand	0.5 to 0.25
Fine sand	0.25 to 0.10
Very fine sand	0.10 to 0.05
Silt	0.05 to 0.002
Clay	less than 0.002

Solum. The upper part of a soil profile, above the C horizon, in which the processes of soil formation are active. The solum in soil consists of the A, E, and B horizons. Generally, the characteristics of the material in these horizons are unlike those of the underlying material. The living roots and plant and animal activities are largely confined to the solum.

Stripcropping. Growing crops in a systematic arrangement of strips or bands that provide vegetative barriers to wind and water erosion.

Structure, soil. The arrangement of primary soil particles into compound particles or aggregates. The principal forms of soil structure are—*platy* (laminated), *prismatic* (vertical axis of aggregates longer than horizontal), *columnar* (prisms with rounded tops), *blocky* (angular or subangular), and *granular*. *Structureless* soils are either *single grained* (each grain by itself, as in dune sand) or *massive* (the particles adhering without any regular cleavage, as in many hardpans).

Stubble mulch. Stubble or other crop residue left on the soil or partly worked into the soil. It protects the soil from wind and water erosion after harvest, during preparation of a seedbed for the next crop, and during the early growing period of the new crop.

Subsoil. Technically, the B horizon; roughly, the part of the solum below plow depth.

Subsoiling. Breaking up a compact subsoil by pulling a special chisel through the soil.

Subsurface layer. Technically, the E horizon. Generally refers to a leached horizon lighter in color and lower in organic matter content than the overlying surface layer.

Terrace. An embankment, or ridge, constructed on the contour or at a slight angle to the contour across sloping soils. The terrace intercepts surface runoff, so that water soaks into the soil or flows slowly to a prepared outlet.

Terrace (geologic). An old alluvial plain, ordinarily flat or undulating, bordering a river, a lake, or the sea.

Texture, soil. The relative proportions of sand, silt, and clay particles in a mass of soil. The basic textural classes, in order of increasing proportion of fine particles, are *sand, loamy sand, sandy loam, loam, silt loam, silt, sandy clay loam, clay loam, silty clay loam, sandy clay, silty clay,* and *clay*. The sand, loamy sand, and sandy loam classes may be further divided by specifying "coarse," "fine," or "very fine."

Tilth, soil. The physical condition of the soil as related to tillage, seedbed preparation, seedling emergence, and root penetration.

Topsoil. The upper part of the soil, which is the most favorable material for plant growth. It is ordinarily rich in organic matter and is used to topdress roadbanks, lawns, and land affected by mining.

Trace elements. Chemical elements, such as zinc, cobalt, manganese, copper, and iron, are in soils in extremely small amounts. They are essential to plant growth.

Unstable fill (in tables). There is a risk of caving or sloughing on banks of fill material.

Upland (geology). Land at a higher elevation, in general, than the alluvial plain or stream terrace; land above the lowlands along streams.

Variant, soil. A soil having properties sufficiently different from those of other known soils to justify a new series name, but occurring in such a limited geographic area that creation of a new series is not justified.

Weathering. All physical and chemical changes produced by atmospheric agents in rocks or other deposits at or near the earth's surface. These changes result in disintegration and decomposition of the material.

Tables

TABLE 1.--TEMPERATURE AND PRECIPITATION

[Data were recorded in the period 1951-80 at Laurel, Mississippi]

Month	Temperature						Precipitation				
	Average daily maximum	Average daily minimum	Average daily	2 years in 10 will have-- Maximum temperature higher than--	2 years in 10 will have-- Minimum temperature lower than--	Average number of growing degree days*	Average	2 years in 10 will have-- Less than--	2 years in 10 will have-- More than--	Average number of days with 0.10 inch or more	Average snowfall
	°F	°F	°F	°F	°F	Units	In	In	In		In
January----	57.7	35.5	46.6	78	14	113	5.06	3.04	6.86	8	.4
February---	61.6	37.7	49.7	81	19	136	4.84	2.65	6.77	7	.2
March------	69.1	44.6	56.9	85	26	250	6.21	3.53	8.57	8	.0
April------	77.8	53.3	65.6	90	36	468	5.27	2.82	7.41	6	.0
May--------	84.1	61.0	72.6	95	44	701	4.99	2.29	7.30	6	.0
June-------	90.4	67.7	79.1	99	54	873	3.54	1.79	5.05	6	.0
July-------	92.2	70.8	81.5	100	63	977	5.39	3.42	7.16	10	.0
August-----	91.9	70.0	81.0	99	60	961	4.11	1.64	6.18	7	.0
September--	87.4	65.4	76.4	97	49	792	4.52	1.18	7.19	6	.0
October----	78.6	52.2	65.4	92	33	477	2.72	.77	4.33	4	.0
November---	67.9	42.7	55.3	84	24	192	3.80	1.66	5.62	5	.0
December---	60.6	37.1	48.9	80	18	97	5.84	2.81	8.45	7	.0
Yearly:											
Average--	76.6	53.2	64.9	---	---	---	---	---	---	---	---
Extreme--	---	---	---	101	13	---	---	---	---	---	---
Total----	---	---	---	---	---	6,037	56.29	46.04	66.03	80	.6

* A growing degree day is a unit of heat available for plant growth. It can be calculated by adding the maximum and minimum daily temperatures, dividing the sum by 2, and subtracting the temperature below which growth is minimal for the principal crops in the area (50 °F).

TABLE 2.--FREEZE DATES IN SPRING AND FALL

[Data were recorded in the period 1951-80
at Laurel, Mississippi]

Probability	Temperature		
	24 °F or lower	28 °F or lower	32 °F or lower
Last freezing temperature in spring:			
1 year in 10 later than--	March 7	March 25	March 29
2 years in 10 later than--	February 23	March 13	March 24
5 years in 10 later than--	February 2	February 19	March 14
First freezing temperature in fall:			
1 year in 10 earlier than--	November 11	November 2	October 28
2 years in 10 earlier than--	November 22	November 10	November 2
5 years in 10 earlier than--	December 11	November 26	November 13

TABLE 3.--GROWING SEASON

[Data were recorded in the period 1951-80
at Laurel, Mississippi]

Probability	Daily minimum temperature during growing season		
	Higher than 24 °F	Higher than 28 °F	Higher than 32 °F
	Days	Days	Days
9 years in 10	271	242	221
8 years in 10	284	255	228
5 years in 10	309	280	243
2 years in 10	336	304	257
1 year in 10	359	317	265

TABLE 4.--ACREAGE AND PROPORTIONATE EXTENT OF THE SOILS

Map symbol	Soil name	Acres	Percent
2	Jena fine sandy loam, frequently flooded	11,409	2.5
3	McLaurin-Urban land complex	490	0.1
4	Malbis-Urban land complex	2,588	0.6
5	Urban land	1,613	0.4
6	Bibb silt loam, frequently flooded	17,606	3.9
7	Savannah-Urban land complex	1,623	0.4
11E	Heidel-Benndale complex, 8 to 20 percent slopes	9,070	2.0
15	Quitman fine sandy loam	9,100	2.0
16	Bigbee loamy sand, occasionally flooded	4,100	0.9
17	Trebloc-Quitman association, occasionally flooded	11,617	2.6
19	Harleston-Cahaba association, occasionally flooded	3,729	0.8
20A	Cahaba sandy loam, occasionally flooded	4,532	1.0
22	Annemaine silt loam, occasionally flooded	3,361	0.7
24A	Prentiss loam, 0 to 2 percent slopes	3,913	0.9
24B	Prentiss loam, 2 to 5 percent slopes	2,060	0.5
25A	Stough fine sandy loam, 0 to 2 percent slopes	3,059	0.7
27	Trebloc silt loam	10,972	2.4
28	Trebloc silt loam, frequently flooded	23,438	5.2
30B	McLaurin loamy sand, 2 to 5 percent slopes	16,245	3.6
30C	McLaurin loamy sand, 5 to 8 percent slopes	9,500	2.1
31B	Benndale fine sandy loam, 2 to 5 percent slopes	1,293	0.3
31C	Benndale fine sandy loam, 5 to 8 percent slopes	435	0.1
33A	Lucedale loam, 0 to 2 percent slopes	726	0.2
34E	Smithdale fine sandy loam, 8 to 15 percent slopes	66,944	14.8
35B	Ruston fine sandy loam, 2 to 5 percent slopes	10,067	2.2
35C	Ruston fine sandy loam, 5 to 8 percent slopes	11,420	2.5
41A	Savannah loam, 0 to 2 percent slopes	7,117	1.6
41B	Savannah loam, 2 to 5 percent slopes	37,667	8.3
41C	Savannah loam, 5 to 8 percent slopes	22,029	4.9
43B	Malbis fine sandy loam, 2 to 5 percent slopes	19,359	4.3
43C	Malbis fine sandy loam, 5 to 8 percent slopes	40,761	9.0
46	Pits-Udorthents complex	590	0.1
80	Susquehanna-Petal association, rolling	9,573	2.1
81B	Freest fine sandy loam, 2 to 5 percent slopes	2,703	0.6
81C	Freest fine sandy loam, 5 to 8 percent slopes	11,461	2.5
83B	Susquehanna fine sandy loam, 2 to 5 percent slopes	2,055	0.5
83D	Susquehanna fine sandy loam, 5 to 12 percent slopes	7,952	1.8
90	Heidel-McLaurin association, hilly	11,741	2.6
131	Trebloc silt loam and Bibb fine sandy loam, occasionally and frequently flooded	8,370	1.9
213	Benndale fine sandy loam, undulating	522	0.1
613	Benndale fine sandy loam, rolling	2,637	0.6
652	Susquehanna fine sandy loam, rolling	678	0.2
822	Malbis fine sandy loam, undulating	1,654	0.4
842	Freest fine sandy loam, undulating	9,057	2.0
843	Ruston fine sandy loam, undulating	1,067	0.2
852	Susquehanna fine sandy loam, undulating	9,148	2.0
	Water	4,789	1.1
	Total	451,840	100.0

TABLE 5.--PRIME FARMLAND

[Only the soils considered prime farmland are listed. Urban or built-up areas of the soils listed are not considered prime farmland. If a soil is prime farmland only under certain conditions, the conditions are specified in parentheses after the soil name. The soils that are shown as occasionally flooded are flooded for brief periods during the winter and early in spring before crops are planted]

Map symbol	Soil name
15	Quitman fine sandy loam
17	Trebloc-Quitman association, occasionally flooded [where drained]
19	Harleston-Cahaba association, occasionally flooded
20A	Cahaba sandy loam, occasionally flooded
22	Annemaine silt loam, occasionally flooded
24A	Prentiss loam, 0 to 2 percent slopes
24B	Prentiss loam, 2 to 5 percent slopes
27	Trebloc silt loam [where drained]
30B	McLaurin loamy sand, 2 to 5 percent slopes
31B	Benndale fine sandy loam, 2 to 5 percent slopes
33A	Lucedale loam, 0 to 2 percent slopes
35B	Ruston fine sandy loam, 2 to 5 percent slopes
41A	Savannah loam, 0 to 2 percent slopes
41B	Savannah loam, 2 to 5 percent slopes
43B	Malbis fine sandy loam, 2 to 5 percent slopes
81B	Freest fine sandy loam, 2 to 5 percent slopes

TABLE 6.--LAND CAPABILITY CLASSES AND YIELDS PER ACRE OF CROPS AND PASTURE

[Yields are those that can be expected under a high level of management. Absence of a yield indicates that the soil is not suited to the crop or the crop generally is not grown on the soil]

Map symbol and soil name	Land capability	Corn	Soybeans	Wheat	Common bermudagrass	Improved bermudagrass	Bahiagrass
		Bu	Bu	Bu	AUM*	AUM*	AUM*
2---------- Jena	Vw	---	---	---	6.5	---	---
3**---------- McLaurin-Urban land	---	---	---	---	---	---	---
4**---------- Malbis-Urban land	---	---	---	---	---	---	---
5**. Urban land							
6---------- Bibb	Vw	---	---	---	---	---	6.0
7**---------- Savannah-Urban land	---	---	---	---	---	---	---
11E**:							
Heidel---------	VIIe	---	---	---	---	---	5.0
Benndale-------	IVe	60	20	---	---	8.0	7.5
15---------- Quitman	IIw	80	30	30	---	10.0	10.0
16---------- Bigbee	IIIs	50	---	---	7.5	---	7.5
17**:							
Trebloc---------	IIIw	---	25	20	---	8.0	8.0
Quitman---------	IIw	80	30	30	---	10.0	10.0
19**:							
Harleston------	IIw	90	35	30	---	11.0	9.0
Cahaba---------	IIw	90	35	45	---	10.0	8.5
20A---------- Cahaba	IIw	90	35	45	---	10.0	8.5
22---------- Annemaine	IIw	100	40	40	---	---	10.0
24A---------- Prentiss	IIw	85	30	30	---	9.0	9.0
24B---------- Prentiss	IIe	80	30	30	---	9.0	9.0
25A---------- Stough	IIw	80	25	30	---	8.0	8.0

See footnote at end of table.

TABLE 6.--LAND CAPABILITY CLASSES AND YIELDS PER ACRE OF CROPS AND PASTURE--Continued

Map symbol and soil name	Land capability	Corn	Soybeans	Wheat	Common bermudagrass	Improved bermudagrass	Bahiagrass
		Bu	Bu	Bu	AUM*	AUM*	AUM*
27---------- Trebloc	IIIw	---	25	20	---	8.0	8.0
28---------- Trebloc	Vw	---	---	---	---	6.0	7.0
30B---------- McLaurin	IIe	75	25	35	---	10.0	8.0
30C---------- McLaurin	IIIe	70	25	28	---	8.5	7.0
31B---------- Benndale	IIe	75	30	35	---	10.5	8.5
31C---------- Benndale	IIIe	70	25	28	---	9.0	8.0
33A---------- Lucedale	I	80	40	40	---	10.0	10.0
34E---------- Smithdale	VIe	---	---	---	4.5	9.0	8.0
35B---------- Ruston	IIe	70	30	40	5.5	12.0	9.5
35C---------- Ruston	IIIe	65	25	30	5.5	12.0	9.5
41A---------- Savannah	IIw	80	35	45	6.0	8.5	9.0
41B---------- Savannah	IIe	75	35	45	6.0	8.5	9.0
41C---------- Savannah	IIIe	70	30	35	5.0	8.0	9.0
43B---------- Malbis	IIe	95	37	35	5.5	9.5	8.5
43C---------- Malbis	IIIe	80	30	30	5.0	9.0	8.0
46**---------- Pits-Udorthents	---	---	---	---	---	---	---
80**: Susquehanna----	VIe	---	---	---	5.0	---	5.5
Petal----------	VIe	---	---	---	4.5	5.5	---
81B---------- Freest	IIe	40	25	35	6.0	7.0	---
81C---------- Freest	IIIe	28	20	25	5.5	6.5	---
83B---------- Susquehanna	IVe	---	20	20	6.0	---	6.5

See footnote at end of table.

TABLE 6.--LAND CAPABILITY CLASSES AND YIELDS PER ACRE OF CROPS AND PASTURE--Continued

Map symbol and soil name	Land capability	Corn	Soybeans	Wheat	Common bermudagrass	Improved bermudagrass	Bahiagrass
		Bu	Bu	Bu	AUM*	AUM*	AUM*
83D---------- Susquehanna	VIe	---	---	---	5.0	---	5.5
90**:							
Heidel---------	VIIe	---	---	---	---	---	5.0
McLaurin-------	IIIe	70	25	25	---	8.5	7.0
131***---------- Trebloc-Bibb	---	---	---	---	---	---	---
213***---------- Benndale	---	---	---	---	---	---	---
613***---------- Benndale	---	---	---	---	---	---	---
652***---------- Susquehanna	---	---	---	---	---	---	---
822***---------- Malbis	---	---	---	---	---	---	---
842***---------- Freest	---	---	---	---	---	---	---
843***---------- Ruston	---	---	---	---	---	---	---
852***---------- Susquehanna	---	---	---	---	---	---	---

* Animal-unit-month: The amount of forage or feed required to feed one animal unit (one cow, one horse, one mule, five sheep, or five goats) for 30 days.

** See description of the map unit for composition and behavior characteristics of the map unit.

*** These map units are in the DeSoto National Forest and are not assigned a capability classification.

TABLE 7.--CAPABILITY CLASSES AND SUBCLASSES

[Miscellaneous areas are excluded. Absence of an entry indicates no acreage]

Class	Total acreage	Major management concerns [Subclass]			
		Erosion [e]	Wetness [w]	Soil problem [s]	Climate [c]
		Acres	Acres	Acres	Acres
I	726	---	---	---	---
II	131,511	91,125	40,386	---	---
III	139,757	114,460	21,197	4,100	---
IV	89,861	89,861	---	---	---
V	56,638	---	56,638	---	---
VI	25,057	25,057	---	---	---
VII	---	---	---	---	---
VIII	---	---	---	---	---

TABLE 8.--WOODLAND MANAGEMENT AND PRODUCTIVITY

[Only the soils suitable for production of commercial trees are listed. Absence of an entry indicates that the information was not available]

Map symbol and soil name	Ordination symbol	Management concerns				Potential productivity		Trees to plant
		Erosion hazard	Equipment limitation	Seedling mortality	Plant competition	Common trees	Site index	
2---------- Jena	1w9	Slight	Severe	Moderate	--------	Loblolly pine-------	100	Loblolly pine, slash pine, American sycamore.
						Sweetgum----------	90	
						Water oak----------	80	
						Southern red oak----	---	
						White oak----------	---	
						Slash pine----------	---	
6---------- Bibb	2w9	Slight	Severe	Severe	Severe	Loblolly pine-------	90	Loblolly pine, sweetgum, yellow-poplar.
						Sweetgum----------	90	
						Water oak----------	90	
						Blackgum----------	---	
11E*:								
Heidel----------	2o1	Slight	Slight	Slight	Slight	Loblolly pine-------	90	Loblolly pine, slash pine.
						Shortleaf pine------	72	
						Slash pine----------	90	
Benndale----------	2o1	Slight	Slight	Slight	Moderate	Loblolly pine-------	94	Loblolly pine, slash pine.
						Longleaf pine-------	79	
						Slash pine----------	94	
15---------- Quitman	2w8	Slight	Moderate	Slight	Slight	Water oak----------	90	Loblolly pine, slash pine, sweetgum, American sycamore, yellow-poplar.
						Loblolly pine-------	92	
						Slash pine----------	90	
						Sweetgum----------	93	
16---------- Bigbee	2s2	Slight	Moderate	Moderate	Slight	Loblolly pine-------	88	Loblolly pine.
17*:								
Trebloc----------	2w9	Slight	Severe	Severe	Moderate	Loblolly pine-------	95	Green ash, loblolly pine, Nuttall oak, Shumard oak, sweetgum.
						Sweetgum----------	90	
						Water oak----------	85	
						Willow oak----------	80	
Quitman----------	2w8	Slight	Moderate	Slight	Slight	Water oak----------	90	Loblolly pine, slash pine, sweetgum, American sycamore, yellow-poplar.
						Loblolly pine-------	92	
						Slash pine----------	90	
						Sweetgum----------	93	
19*:								
Harleston---------	2w8	Slight	Moderate	Slight	Slight	Loblolly pine-------	90	Loblolly pine, slash pine.
						Shortleaf pine------	80	
						Sweetgum----------	75	
Cahaba----------	2s7	Slight	Slight	Moderate	Moderate	Southern red oak----	---	American sycamore.
						White oak----------	---	
						Cherrybark oak------	---	
						Longleaf pine-------	72	
						Blackgum----------	---	

See footnote at end of table.

TABLE 8.--WOODLAND MANAGEMENT AND PRODUCTIVITY--Continued

Map symbol and soil name	Ordination symbol	Management concerns				Potential productivity		Trees to plant
		Erosion hazard	Equipment limitation	Seedling mortality	Plant competition	Common trees	Site index	
20A---------- Cahaba	2o7	Slight	Slight	Slight	Moderate	Loblolly pine-------	87	Loblolly pine, slash pine, yellow-poplar, sweetgum.
						Slash pine----------	91	
						Yellow-poplar-------	---	
						Sweetgum------------	90	
						Cherrybark oak------	---	
22---------- Annemaine	3w8	Slight	Moderate	Slight	Moderate	Loblolly pine-------	80	Yellow-poplar, loblolly pine, slash pine, sweetgum, American sycamore.
						Shortleaf pine------	70	
						Slash pine----------	80	
						Yellow-poplar-------	90	
						Sweetgum------------	80	
						American sycamore---	90	
24A, 24B---------- Prentiss	2o7	Slight	Slight	Slight	Slight	Loblolly pine-------	88	Loblolly pine, slash pine.
						Shortleaf pine------	79	
						Sweetgum------------	90	
						Cherrybark oak------	90	
						White oak-----------	80	
25A---------- Stough	2w8	Slight	Moderate	Slight	Moderate	Cherrybark oak------	85	Loblolly pine, slash pine, sweetgum.
						Loblolly pine-------	90	
						Slash pine----------	86	
						Sweetgum------------	85	
						Water oak-----------	80	
27, 28---------- Trebloc	2w9	Slight	Severe	Severe	Moderate	Loblolly pine-------	95	Green ash, loblolly pine, Nuttall oak, Shumard oak, sweetgum.
						Sweetgum------------	90	
						Water oak-----------	85	

30B, 30C---------- McLaurin	2o1	Slight	Slight	Slight	Slight	Loblolly pine-------	90	Loblolly pine, slash pine.
						Longleaf pine-------	72	
						Slash pine----------	90	
31B, 31C---------- Benndale	2o1	Slight	Slight	Slight	Moderate	Loblolly pine-------	94	Loblolly pine, slash pine.
						Longleaf pine-------	79	
						Slash pine----------	94	
33A---------- Lucedale	2o1	Slight	Slight	Slight	Slight	Loblolly pine-------	90	Loblolly pine, slash pine.
						Longleaf pine-------	75	
						Slash pine----------	90	
34E---------- Smithdale	2o1	Slight	Slight	Slight	Slight	Shortleaf pine------	69	Loblolly pine.
						Loblolly pine-------	86	
						Longleaf pine-------	69	
						Slash pine----------	85	
35B, 35C---------- Ruston	2o1	Slight	Slight	Slight	--------	Loblolly pine-------	91	Loblolly pine, slash pine, longleaf pine.
						Slash pine----------	91	
						Longleaf pine-------	76	
41A, 41B, 41C------ Savannah	2o7	Slight	Slight	Slight	Moderate	Loblolly pine-------	88	Loblolly pine, slash pine, sweetgum, American sycamore, yellow-poplar.
						Longleaf pine-------	78	
						Slash pine----------	88	
						Sweetgum------------	85	

See footnote at end of table.

TABLE 8.--WOODLAND MANAGEMENT AND PRODUCTIVITY--Continued

Map symbol and soil name	Ordination symbol	Management concerns				Potential productivity		Trees to plant
		Erosion hazard	Equipment limitation	Seedling mortality	Plant competition	Common trees	Site index	
43B, 43C---------- Malbis	2o1	Slight	Slight	Slight	--------	Loblolly pine-------	90	Loblolly pine, slash pine.
						Slash pine----------	90	
						Longleaf pine-------	80	
80*:								
Susquehanna-------	3c2	Slight	Moderate	Slight	Moderate	Loblolly pine-------	78	Loblolly pine, shortleaf pine.
						Shortleaf pine------	68	
Petal-------------	2o7	Slight	Slight	Slight	Slight	Loblolly pine-------	90	Loblolly pine, longleaf pine, slash pine, cherrybark oak.
						Longleaf pine-------	75	
						Shortleaf pine------	80	
						Slash pine----------	85	
81B, 81C---------- Freest	2w8	Slight	Moderate	Slight	Moderate	Loblolly pine-------	90	Loblolly pine, slash pine.
						Shortleaf pine------	80	
						Slash pine----------	85	
						Sweetgum------------	---	
83B, 83D---------- Susquehanna	3c2	Slight	Moderate	Slight	Moderate	Loblolly pine-------	78	Loblolly pine, shortleaf pine.
						Shortleaf pine------	68	
90*:								
Heidel------------	2o1	Slight	Slight	Slight	Slight	Loblolly pine-------	90	Loblolly pine, slash pine.
						Shortleaf pine------	72	
						Slash pine----------	90	
McLaurin----------	2o1	Slight	Slight	Slight	Slight	Loblolly pine-------	90	Loblolly pine, slash pine.
						Longleaf pine-------	72	
						Slash pine----------	90	
131**:								
Trebloc----------								
Bibb-------------								
213**, 613**------- Benndale								
652**------------- Susquehanna								
822**------------- Malbis								
842**------------- Freest								
843**------------- Ruston								
852**------------- Susquehanna								

* See description of the map unit for composition and behavior characteristics of the map unit.
** These map units are in the DeSoto National Forest and are not rated for woodland management and productivity.

TABLE 9.--WOODLAND UNDERSTORY VEGETATION

[Only the soils suitable for production of commercial trees are listed]

Map symbol and soil name	Total production		Characteristic vegetation	Composition
	Kind of year	Dry weight		
		Lb/acre		Pct
2---------- Jena	Normal	1,300	Pinehill bluestem-------- Beaked panicum---------- Longleaf uniola---------- Low panicums----------	46 11 23 8
6---------- Bibb	Normal	1,200	Pinehill bluestem-------- Cutover muhly---------- Longleaf uniola---------- Grassleaf goldaster------ Beaked panicum----------	25 17 17 13 7
11E*:				
Heidel----------	Normal	1,300	Pinehill bluestem-------- Slender bluestem--------- Beaked panicum---------- Low panicums----------	46 15 15 12
Benndale----------	Normal	1,300	Pinehill bluestem-------- Slender bluestem--------- Beaked panicum---------- Low panicums----------	46 15 15 12
15---------- Quitman	Normal	1,200	Longleaf uniola---------- Pinehill bluestem-------- Cutover muhly----------	17 25 17
16---------- Bigbee	Normal	800	Pinehill bluestem-------- Panicum---------- Threeawn---------- Grassleaf goldaster------ Pineywoods dropseed------	38 13 13 12 12
17*:				
Trebloc----------	Normal	1,200	Pinehill bluestem-------- Cutover muhly---------- Longleaf uniola---------- Beaked panicum----------	25 17 17 9
Quitman----------	Normal	1,200	Longleaf uniola---------- Pinehill bluestem-------- Cutover muhly----------	17 25 17
19*:				
Harleston----------	Normal	1,200	Longleaf uniola---------- Cutover muhly---------- Pinehill bluestem--------	33 28 22
Cahaba----------	Normal	1,000	Pinehill bluestem-------- Longleaf uniola---------- Beaked panicum----------	23 23 12

See footnote at end of table.

TABLE 9.--WOODLAND UNDERSTORY VEGETATION--Continued

Map symbol and soil name	Total production		Characteristic vegetation	Composition
	Kind of year	Dry weight		
		Lb/acre		Pct
20A---------- Cahaba	Normal	1,000	Pinehill bluestem--------	23
			Longleaf uniola----------	23
			Beaked panicum-----------	12
22---------- Annemaine	Normal	---		
24A, 24B---------- Prentiss	Normal	1,000	Pinehill bluestem--------	23
			Longleaf uniola----------	23
			Beaked panicum-----------	12
25A---------- Stough	Normal	1,200	Pinehill bluestem--------	23
			Longleaf uniola----------	23
			Cutover muhly------------	12
27, 28---------- Trebloc	Normal	1,200	Pinehill bluestem--------	25
			Cutover muhly------------	17
			Longleaf uniola----------	17
			Beaked panicum-----------	9
30B, 30C---------- McLaurin	Normal	1,300	Slender bluestem---------	20
			Low panicums-------------	20
			Pinehill bluestem--------	46
31B, 31C---------- Benndale	Normal	1,300	Pinehill bluestem--------	46
			Slender bluestem---------	15
			Low panicums-------------	12
33A---------- Lucedale	Normal	1,300	Pinehill bluestem--------	46
			Beaked panicum-----------	15
			Slender bluestem---------	15
			Low panicums-------------	12
34E---------- Smithdale	Normal	1,300	Slender bluestem---------	15
			Pinehill bluestem--------	46
			Beaked panicum-----------	15
			Low panicums-------------	12
35B, 35C---------- Ruston	Normal	1,300	Slender bluestem---------	15
			Pinehill bluestem--------	46
			Beaked panicum-----------	15
			Low panicums-------------	12
41A, 41B, 41C------ Savannah	Normal	1,000	Longleaf uniola----------	23
			Pinehill bluestem--------	23
			Beaked panicum-----------	12
			Low panicums-------------	8
43B, 43C---------- Malbis	Normal	1,300	Pinehill bluestem--------	46
			Slender bluestem---------	15
			Beaked panicum-----------	15
			Low panicums-------------	12
80*: Susquehanna--------	Normal	1,000	Pinehill bluestem--------	30
			Beaked panicum-----------	10
			Low panicums-------------	10
			Longleaf uniola----------	30

See footnote at end of table.

TABLE 9.--WOODLAND UNDERSTORY VEGETATION--Continued

Map symbol and soil name	Total production		Characteristic vegetation	Composition
	Kind of year	Dry weight		
		Lb/acre		Pct
80*:				
Petal	Normal	1,000	Pinehill bluestem	23
			Longleaf uniola	23
			Beaked panicum	12
81B, 81C	Normal	1,200	Pinehill bluestem	25
Freest			Cutover muhly	17
			Longleaf uniola	12
83B, 83D	Normal	1,000	Pinehill bluestem	30
Susquehanna			Beaked panicum	10
			Low panicums	10
			Longleaf uniola	30
90*:				
Heidel	Normal	1,300	Pinehill bluestem	46
			Slender bluestem	15
			Beaked panicum	15
			Low panicums	12
McLaurin	Normal	1,300	Slender bluestem	15
			Beaked panicum	15
			Pinehill bluestem	46
			Low panicums	12
131**:				
Trebloc				
Bibb				
213**, 613**				
Benndale				
652**				
Susquehanna				
822**				
Malbis				
842**				
Freest				
843**				
Ruston				
852**				
Susquehanna				

* See description of the map unit for composition and behavior characteristics of the map unit.

** These map units are in the DeSoto National Forest and are not rated for woodland understory vegetation.

TABLE 10.--RECREATIONAL DEVELOPMENT

[Some terms that describe restrictive soil features are defined in the Glossary. See text for definitions of "slight," "moderate," and "severe." Absence of an entry indicates that the soil was not rated]

Map symbol and soil name	Camp areas	Picnic areas	Playgrounds	Paths and trails	Golf fairways
2---------- Jena	Severe: flooding.	Moderate: flooding.	Severe: flooding.	Moderate: flooding.	Severe: flooding.
3*: McLaurin----------	Slight----------	Slight----------	Moderate: slope.	Slight----------	Moderate: droughty.
Urban land.					
4*: Malbis----------	Slight----------	Slight----------	Moderate: slope.	Slight----------	Slight.
Urban land.					
5*. Urban land					
6---------- Bibb	Severe: flooding, wetness.	Severe: wetness.	Severe: wetness, flooding.	Severe: wetness.	Severe: wetness, flooding.
7*: Savannah----------	Moderate: wetness, percs slowly.	Moderate: wetness, percs slowly.	Moderate: slope, wetness, percs slowly.	Moderate: wetness.	Moderate: wetness.
Urban land.					
11E*: Heidel----------	Severe: slope.	Severe: slope.	Severe: slope.	Moderate: slope.	Severe: slope.
Benndale----------	Moderate: slope.	Moderate: slope.	Severe: slope.	Slight----------	Moderate: slope.
15---------- Quitman	Moderate: wetness, percs slowly.	Moderate: wetness, percs slowly.	Moderate: wetness.	Moderate: wetness.	Moderate: wetness.
16---------- Bigbee	Severe: flooding.	Slight----------	Moderate: flooding.	Slight----------	Moderate: droughty, flooding, too sandy.
17*: Trebloc----------	Severe: flooding, wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.
Quitman----------	Severe: flooding.	Moderate: wetness, percs slowly.	Moderate: wetness, flooding.	Moderate: wetness.	Moderate: wetness, flooding.

See footnote at end of table.

TABLE 10.--RECREATIONAL DEVELOPMENT--Continued

Map symbol and soil name	Camp areas	Picnic areas	Playgrounds	Paths and trails	Golf fairways
19*: Harleston	Severe: flooding.	Moderate: wetness.	Moderate: small stones, wetness.	Slight	Moderate: flooding.
Cahaba	Severe: flooding.	Slight	Moderate: flooding.	Slight	Moderate: flooding.
20A Cahaba	Severe: flooding.	Slight	Moderate: flooding.	Slight	Moderate: flooding.
22 Annemaine	Severe: flooding.	Moderate: wetness, percs slowly.	Moderate: wetness, flooding.	Moderate: wetness.	Moderate: wetness, flooding.
24A Prentiss	Moderate: wetness, percs slowly.	Moderate: wetness, percs slowly.	Moderate: wetness, percs slowly.	Slight	Moderate: droughty.
24B Prentiss	Moderate: wetness, percs slowly.	Moderate: wetness, percs slowly.	Moderate: slope, wetness, percs slowly.	Slight	Moderate: droughty.
25A Stough	Severe: wetness.	Moderate: wetness, percs slowly.	Severe: wetness.	Moderate: wetness.	Moderate: wetness, droughty.
27 Trebloc	Severe: flooding, wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.
28 Trebloc	Severe: flooding, wetness.	Severe: wetness.	Severe: wetness, flooding.	Severe: wetness.	Severe: wetness, flooding.
30B McLaurin	Slight	Slight	Moderate: slope.	Slight	Moderate: droughty.
30C McLaurin	Slight	Slight	Severe: slope.	Slight	Moderate: droughty.
31B Benndale	Slight	Slight	Moderate: slope.	Slight	Slight.
31C Benndale	Slight	Slight	Severe: slope.	Slight	Slight.
33A Lucedale	Slight	Slight	Slight	Slight	Slight.
34E Smithdale	Moderate: slope.	Moderate: slope.	Severe: slope.	Slight	Moderate: slope.
35B Ruston	Slight	Slight	Moderate: slope, small stones.	Slight	Slight.
35C Ruston	Slight	Slight	Severe: slope.	Slight	Slight.

See footnote at end of table.

TABLE 10.--RECREATIONAL DEVELOPMENT--Continued

Map symbol and soil name	Camp areas	Picnic areas	Playgrounds	Paths and trails	Golf fairways
41A---------- Savannah	Moderate: wetness, percs slowly.	Moderate: wetness, percs slowly.	Moderate: wetness, percs slowly.	Moderate: wetness.	Moderate: wetness.
41B---------- Savannah	Moderate: wetness, percs slowly.	Moderate: wetness, percs slowly.	Moderate: slope, wetness, percs slowly.	Moderate: wetness.	Moderate: wetness.
41C---------- Savannah	Moderate: wetness, percs slowly.	Moderate: wetness, percs slowly.	Severe: slope.	Moderate: wetness.	Moderate: wetness.
43B---------- Malbis	Slight----------	Slight----------	Moderate: slope.	Slight----------	Slight.
43C---------- Malbis	Slight----------	Slight----------	Severe: slope.	Slight----------	Slight.
46*: Pits.					
Udorthents.					
80*: Susquehanna----------	Severe: percs slowly.	Severe: percs slowly.	Severe: slope, percs slowly.	Severe: erodes easily.	Moderate: slope.
Petal----------	Moderate: slope, percs slowly.	Moderate: slope, percs slowly.	Severe: slope.	Slight----------	Moderate: slope.
81B---------- Freest	Moderate: wetness, percs slowly.	Moderate: wetness, percs slowly.	Moderate: slope, wetness, percs slowly.	Moderate: wetness.	Moderate: wetness.
81C---------- Freest	Moderate: wetness, percs slowly.	Moderate: wetness, percs slowly.	Severe: slope.	Moderate: wetness.	Moderate: wetness.
83B---------- Susquehanna	Severe: percs slowly.	Severe: percs slowly.	Severe: percs slowly.	Slight----------	Slight.
83D---------- Susquehanna	Severe: percs slowly.	Severe: percs slowly.	Severe: slope, percs slowly.	Severe: erodes easily.	Moderate: slope.
90*: Heidel----------	Moderate: slope.	Moderate: slope.	Severe: slope.	Slight----------	Severe: slope.
McLaurin----------	Slight----------	Slight----------	Severe: slope.	Slight----------	Slight.

* See description of the map unit for composition and behavior characteristics of the map unit.

TABLE 11.--WILDLIFE HABITAT

[See text for definitions of "good," "fair," "poor," and "very poor." Absence of an entry indicates that the soil was not rated]

Map symbol and soil name	Potential for habitat elements								Potential as habitat for--		
	Grain and seed crops	Grasses and legumes	Wild herbaceous plants	Hardwood trees	Coniferous plants	Shrubs	Wetland plants	Shallow water areas	Openland wildlife	Woodland wildlife	Wetland wildlife
2---------- Jena	Poor	Fair	Fair	Good	Good	---	Poor	Poor	Fair	Good	Poor
3*: McLaurin----------	Fair	Good	Good	Good	Good	---	Poor	Very poor.	Good	Good	Very poor.
Urban land.											
4*: Malbis----------	Fair	Good	Good	Good	Good	---	Poor	Very poor.	Good	Good	Very poor.
Urban land.											
5*. Urban land											
6---------- Bibb	Poor	Fair	Fair	Fair	Fair	---	Good	Good	Fair	Fair	Good
7*: Savannah----------	Good	Good	Good	Good	Good	---	Poor	Very poor.	Good	Good	Very poor.
Urban land.											
11E*: Heidel----------	Poor	Fair	Good	Good	Good	---	Poor	Very poor.	Fair	Good	Very poor.
Benndale----------	Fair	Good	Good	Good	Good	---	Very poor.	Very poor.	Good	Good	Very poor.
15---------- Quitman	Good	Good	Good	Good	---	Good	Fair	Poor	Good	Good	Poor
16---------- Bigbee	Poor	Fair	Fair	Poor	Fair	---	Very poor.	Very poor.	Fair	Poor	Very poor.
17*: Trebloc----------	Poor	Fair	Fair	Fair	Fair	---	Good	Good	Fair	Fair	Good
Quitman----------	Good	Good	Good	Good	---	Good	Fair	Poor	Good	Good	Poor
19*: Harleston---------	Good	Good	Good	Good	Good	---	Poor	Poor	Good	Good	Poor
Cahaba----------	Good	Good	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
20A---------- Cahaba	Good	Good	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
22---------- Annemaine	Good	Good	Good	Good	Good	---	Good	Good	Good	Good	Poor

See footnote at end of table.

TABLE 11.--WILDLIFE HABITAT--Continued

Map symbol and soil name	Potential for habitat elements								Potential as habitat for--		
	Grain and seed crops	Grasses and legumes	Wild herbaceous plants	Hardwood trees	Coniferous plants	Shrubs	Wetland plants	Shallow water areas	Openland wildlife	Woodland wildlife	Wetland wildlife
24A, 24B---------- Prentiss	Fair	Good	Good	Good	Good	Good	Poor	Poor	Good	Good	Poor
25A---------- Stough	Fair	Good	Good	Good	Good	---	Fair	Fair	Good	Good	Fair
27, 28---------- Trebloc	Poor	Fair	Fair	Fair	Fair	---	Good	Good	Fair	Fair	Good
30B---------- McLaurin	Good	Good	Good	Good	Good	---	Poor	Very poor.	Good	Good	Very poor.
30C---------- McLaurin	Fair	Good	Good	Good	Good	---	Poor	Very poor.	Good	Good	Very poor.
31B---------- Benndale	Good	Good	Good	Good	Good	---	Poor	Very poor.	Good	Good	Very poor.
31C---------- Benndale	Fair	Good	Good	Good	Good	---	Very poor.	Very poor.	Good	Good	Very poor.
33A---------- Lucedale	Good	Good	Good	Good	Good	---	Very poor.	Very poor.	Good	Good	Very poor.
34E---------- Smithdale	Fair	Good	Good	Good	Good	---	Very poor.	Very poor.	Good	Good	Very poor.
35B---------- Ruston	Good	Good	Good	---	Good	---	Poor	Very poor.	Good	Good	Very poor.
35C---------- Ruston	Fair	Good	Good	---	Good	---	Very poor.	Very poor.	Good	Good	Very poor.
41A, 41B---------- Savannah	Good	Good	Good	Good	Good	---	Poor	Very poor.	Good	Good	Very poor.
41C---------- Savannah	Fair	Good	Good	Good	Good	---	Very poor.	Very poor.	Good	Good	Very poor.
43B---------- Malbis	Good	Good	Good	Good	Good	---	Poor	Very poor.	Good	Good	Very poor.
43C---------- Malbis	Fair	Good	Good	Good	Good	---	Poor	Very poor.	Good	Good	Very poor.
46*: Pits.											
Udorthents.											
80*: Susquehanna-------	Fair	Good	Good	Good	Good	---	Very poor.	Very poor.	Good	Good	Very poor.
Petal----------	Fair	Good	Good	Good	Good	---	Very poor.	Very poor.	Good	Good	Very poor.
81B---------- Freest	Good	Good	Good	Good	Good	---	Poor	Very poor.	Good	Good	Poor

See footnote at end of table.

TABLE 11.--WILDLIFE HABITAT--Continued

Map symbol and soil name	Potential for habitat elements								Potential as habitat for--		
	Grain and seed crops	Grasses and legumes	Wild herbaceous plants	Hardwood trees	Coniferous plants	Shrubs	Wetland plants	Shallow water areas	Openland wildlife	Woodland wildlife	Wetland wildlife
81C---------- Freest	Fair	Good	Good	Good	Good	---	Poor	Very poor.	Good	Good	Poor
83B, 83D---------- Susquehanna	Fair	Good	Good	Good	Good	---	Very poor.	Very poor.	Good	Good	Very poor.
90*: Heidel----------	Poor	Fair	Good	Good	Good	---	Poor	Very poor.	Fair	Good	Very poor.
McLaurin----------	Fair	Good	Good	Good	Good	---	Poor	Very poor.	Good	Good	Very poor.

* See description of the map unit for composition and behavior characteristics of the map unit.

TABLE 12.--BUILDING SITE DEVELOPMENT

[Some terms that describe restrictive soil features are defined in the Glossary. See text for definitions of "slight," "moderate," and "severe." Absence of an entry indicates that the soil was not rated. The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation]

Map symbol and soil name	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
2---------- Jena	Severe: cutbanks cave.	Severe: flooding.	Severe: flooding.	Severe: flooding.	Severe: flooding.	Severe: flooding.
3*: McLaurin--------- Urban land.	Severe: cutbanks cave.	Slight---------	Slight---------	Moderate: slope.	Slight---------	Moderate: droughty.
4*: Malbis---------- Urban land.	Moderate: wetness.	Slight---------	Moderate: wetness.	Moderate: slope.	Moderate: low strength.	Slight.
5*. Urban land						
6---------- Bibb	Severe: wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: wetness, flooding.	Severe: wetness, flooding.
7*: Savannah--------- Urban land.	Severe: wetness.	Moderate: wetness.	Severe: wetness.	Moderate: wetness.	Moderate: wetness.	Moderate: wetness.
11E*: Heidel---------- Benndale---------	Severe: slope. Moderate: slope.	Severe: slope. Moderate: slope.	Severe: slope. Moderate: slope.	Severe: slope. Severe: slope.	Severe: slope. Moderate: slope.	Severe: slope. Moderate: slope.
15---------- Quitman	Severe: wetness.	Moderate: wetness.	Severe: wetness.	Moderate: wetness.	Moderate: low strength, wetness.	Moderate: wetness.
16---------- Bigbee	Severe: cutbanks cave.	Severe: flooding.	Severe: flooding.	Severe: flooding.	Severe: flooding.	Moderate: droughty, flooding, too sandy.
17*: Trebloc---------- Quitman----------	Severe: wetness. Severe: wetness.	Severe: flooding, wetness. Severe: flooding.	Severe: flooding, wetness. Severe: flooding, wetness.	Severe: flooding, wetness. Severe: flooding.	Severe: low strength, wetness, flooding. Severe: flooding.	Severe: wetness. Moderate: wetness, flooding.

See footnote at end of table.

TABLE 12.--BUILDING SITE DEVELOPMENT--Continued

Map symbol and soil name	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
19*: Harleston	Severe: wetness.	Severe: flooding.	Severe: flooding, wetness.	Severe: flooding.	Severe: flooding.	Moderate: flooding.
Cahaba	Moderate: flooding.	Severe: flooding.	Severe: flooding.	Severe: flooding.	Severe: flooding.	Moderate: flooding.
20A---- Cahaba	Moderate: flooding.	Severe: flooding.	Severe: flooding.	Severe: flooding.	Severe: flooding.	Moderate: flooding.
22---- Annemaine	Severe: wetness.	Severe: flooding.	Severe: flooding, wetness.	Severe: flooding.	Severe: low strength, flooding.	Moderate: wetness, flooding.
24A, 24B---- Prentiss	Severe: wetness.	Moderate: wetness.	Severe: wetness.	Moderate: wetness.	Moderate: wetness.	Moderate: droughty.
25A---- Stough	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Moderate: wetness.	Moderate: wetness, droughty.
27---- Trebloc	Severe: wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: low strength, wetness.	Severe: wetness.
28---- Trebloc	Severe: wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: low strength, wetness, flooding.	Severe: wetness, flooding.
30B---- McLaurin	Severe: cutbanks cave.	Slight----	Slight----	Slight----	Slight----	Moderate: droughty.
30C---- McLaurin	Severe: cutbanks cave.	Slight----	Slight----	Moderate: slope.	Slight----	Moderate: droughty.
31B---- Benndale	Slight----	Slight----	Slight----	Slight----	Slight----	Slight.
31C---- Benndale	Slight----	Slight----	Slight----	Moderate: slope.	Slight----	Slight.
33A---- Lucedale	Slight----	Slight----	Slight----	Slight----	Slight----	Slight.
34E---- Smithdale	Moderate: slope.	Moderate: slope.	Moderate: slope.	Severe: slope.	Moderate: slope.	Moderate: slope.
35B---- Ruston	Slight----	Slight----	Slight----	Slight----	Moderate: low strength.	Slight.
35C---- Ruston	Slight----	Slight----	Slight----	Moderate: slope.	Moderate: low strength.	Slight.
41A, 41B---- Savannah	Severe: wetness.	Moderate: wetness.	Severe: wetness.	Moderate: wetness.	Moderate: wetness.	Moderate: wetness.
41C---- Savannah	Severe: wetness.	Moderate: wetness.	Severe: wetness.	Moderate: wetness, slope.	Moderate: wetness.	Moderate: wetness.

See footnote at end of table.

TABLE 12.--BUILDING SITE DEVELOPMENT--Continued

Map symbol and soil name	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
43B---------- Malbis	Moderate: wetness.	Slight---------	Moderate: wetness.	Slight---------	Moderate: low strength.	Slight.
43C---------- Malbis	Moderate: wetness.	Slight---------	Moderate: wetness.	Moderate: slope.	Moderate: low strength.	Slight.
46*: Pits.						
Udorthents.						
80*: Susquehanna------	Moderate: too clayey, slope.	Severe: shrink-swell.	Severe: shrink-swell.	Severe: shrink-swell, slope.	Severe: low strength, shrink-swell.	Moderate: slope.
Petal----------	Moderate: too clayey, wetness, slope.	Moderate: shrink-swell, slope.	Severe: shrink-swell.	Severe: slope.	Moderate: slope, shrink-swell.	Moderate: slope.
81B, 81C---------- Freest	Severe: wetness.	Severe: shrink-swell.	Severe: wetness, shrink-swell.	Severe: shrink-swell.	Severe: low strength, shrink-swell.	Moderate: wetness.
83B---------- Susquehanna	Moderate: too clayey.	Severe: shrink-swell.	Severe: shrink-swell.	Severe: shrink-swell.	Severe: low strength, shrink-swell.	Slight.
83D---------- Susquehanna	Moderate: too clayey, slope.	Severe: shrink-swell.	Severe: shrink-swell.	Severe: shrink-swell, slope.	Severe: low strength, shrink-swell.	Moderate: slope.
90*: Heidel----------	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.
McLaurin---------	Severe: cutbanks cave.	Slight---------	Slight---------	Moderate: slope.	Slight---------	Slight.

* See description of the map unit for composition and behavior characteristics of the map unit.

TABLE 13.--SANITARY FACILITIES

[Some terms that describe restrictive soil features are defined in the Glossary. See text for definitions of "slight," "good," and other terms. Absence of an entry indicates that the soil was not rated. The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation]

Map symbol and soil name	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
2---------- Jena	Severe: flooding.	Severe: seepage, flooding.	Severe: flooding, seepage.	Severe: flooding, seepage.	Fair: too sandy.
3*: McLaurin----------	Moderate: percs slowly.	Severe: seepage.	Slight----------	Severe: seepage.	Good.
Urban land.					
4*: Malbis----------	Severe: wetness, percs slowly.	Moderate: slope.	Moderate: wetness.	Moderate: wetness.	Fair: wetness.
Urban land.					
5*. Urban land					
6---------- Bibb	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Poor: wetness.
7*: Savannah----------	Severe: wetness, percs slowly.	Severe: wetness.	Severe: wetness.	Moderate: wetness.	Fair: too clayey, wetness.
Urban land.					
11E*: Heidel----------	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Poor: slope.
Benndale----------	Moderate: slope.	Severe: slope.	Severe: seepage.	Moderate: slope.	Fair: slope.
15---------- Quitman	Severe: wetness, percs slowly.	Severe: wetness.	Severe: wetness.	Moderate: wetness.	Fair: too clayey, wetness.
16---------- Bigbee	Severe: flooding, wetness, poor filter.	Severe: seepage, flooding.	Severe: flooding, seepage, wetness.	Severe: flooding, seepage.	Poor: seepage, too sandy.
17*: Trebloc----------	Severe: flooding, wetness, percs slowly.	Severe: flooding, wetness.	Severe: flooding, wetness, too clayey.	Severe: flooding, wetness.	Poor: too clayey, wetness.

See footnote at end of table.

TABLE 13.--SANITARY FACILITIES--Continued

Map symbol and soil name	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
17*: Quitman	Severe: flooding, wetness, percs slowly.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Fair: too clayey, wetness.
19*: Harleston	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Fair: wetness.
Cahaba	Severe: flooding.	Severe: seepage, flooding.	Severe: flooding, seepage.	Severe: flooding.	Fair: thin layer.
20A--- Cahaba	Severe: flooding.	Severe: seepage, flooding.	Severe: flooding, seepage.	Severe: flooding.	Fair: thin layer.
22--- Annemaine	Severe: flooding, wetness, percs slowly.	Severe: wetness.	Severe: flooding, wetness, too clayey.	Severe: flooding, wetness.	Poor: too clayey.
24A, 24B--- Prentiss	Severe: wetness, percs slowly.	Severe: wetness.	Moderate: wetness.	Moderate: wetness.	Fair: wetness.
25A--- Stough	Severe: wetness, percs slowly.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Poor: wetness.
27--- Trebloc	Severe: wetness, percs slowly.	Severe: flooding, wetness.	Severe: wetness, too clayey.	Severe: wetness.	Poor: too clayey, wetness.
28--- Trebloc	Severe: flooding, wetness, percs slowly.	Severe: flooding, wetness.	Severe: flooding, wetness, too clayey.	Severe: flooding, wetness.	Poor: too clayey, wetness.
30B, 30C--- McLaurin	Slight---	Severe: seepage.	Slight---	Severe: seepage.	Good.
31B, 31C--- Benndale	Slight---	Moderate: seepage, slope.	Severe: seepage.	Slight---	Good.
33A--- Lucedale	Slight---	Moderate: seepage.	Moderate: too clayey.	Slight---	Fair: too clayey.
34E--- Smithdale	Moderate: slope.	Severe: seepage, slope.	Severe: seepage.	Severe: seepage.	Fair: too clayey, slope.
35B, 35C--- Ruston	Moderate: percs slowly.	Moderate: seepage, slope.	Moderate: too clayey.	Slight---	Fair: too clayey.

See footnote at end of table.

TABLE 13.--SANITARY FACILITIES--Continued

Map symbol and soil name	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
41A, 41B, 41C---- Savannah	Severe: wetness, percs slowly.	Severe: wetness.	Severe: wetness.	Moderate: wetness.	Fair: too clayey, wetness.
43B, 43C---- Malbis	Severe: wetness, percs slowly.	Moderate: slope.	Moderate: wetness.	Moderate: wetness.	Fair: wetness.
46*: Pits.					
Udorthents.					
80*: Susquehanna----	Severe: percs slowly.	Severe: slope.	Severe: too clayey.	Moderate: slope.	Poor: too clayey, hard to pack.
Petal----	Severe: wetness, percs slowly.	Severe: slope, wetness.	Severe: too clayey.	Moderate: wetness, slope.	Poor: too clayey, hard to pack.
81B, 81C---- Freest	Severe: wetness, percs slowly.	Severe: wetness.	Severe: wetness, too clayey.	Severe: wetness.	Poor: too clayey, hard to pack.
83B---- Susquehanna	Severe: percs slowly.	Moderate: slope.	Severe: too clayey.	Slight----	Poor: too clayey, hard to pack.
83D---- Susquehanna	Severe: percs slowly.	Severe: slope.	Severe: too clayey.	Moderate: slope.	Poor: too clayey, hard to pack.
90*: Heidel----	Moderate: slope.	Severe: slope.	Moderate: slope.	Severe: seepage.	Fair: slope.
McLaurin----	Slight----	Severe: seepage.	Slight----	Severe: seepage.	Good.

* See description of the map unit for composition and behavior characteristics of the map unit.

TABLE 14.--CONSTRUCTION MATERIALS

[Some terms that describe restrictive soil features are defined in the Glossary. See text for definitions of "good," "fair," and other terms. Absence of an entry indicates that the soil was not rated. The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation]

Map symbol and soil name	Roadfill	Sand	Gravel	Topsoil
2---- Jena	Good	Improbable: excess fines.	Improbable: excess fines.	Good.
3*: McLaurin----	Good	Improbable: excess fines.	Improbable: excess fines.	Fair: too sandy, small stones.
Urban land.				
4*: Malbis----	Fair: low strength, wetness.	Improbable: excess fines.	Improbable: excess fines.	Good.
Urban land.				
5*. Urban land				
6---- Bibb	Poor: wetness.	Improbable: excess fines.	Improbable: excess fines.	Poor: wetness.
7*: Savannah----	Fair: low strength, wetness.	Improbable: excess fines.	Improbable: excess fines.	Good.
Urban land.				
11E*: Heidel----	Fair: slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: slope.
Benndale----	Good	Improbable: excess fines.	Improbable: excess fines.	Fair: slope.
15---- Quitman	Fair: low strength, wetness.	Improbable: excess fines.	Improbable: excess fines.	Good.
16---- Bigbee	Good	Probable	Improbable: too sandy.	Fair: too sandy, small stones.
17*: Trebloc----	Poor: low strength, wetness.	Improbable: excess fines.	Improbable: excess fines.	Poor: wetness.
Quitman----	Fair: low strength, wetness.	Improbable: excess fines.	Improbable: excess fines.	Good.

See footnote at end of table.

TABLE 14.--CONSTRUCTION MATERIALS--Continued

Map symbol and soil name	Roadfill	Sand	Gravel	Topsoil
19*: Harleston	Fair: low strength, wetness.	Improbable: excess fines.	Improbable: excess fines.	Fair: small stones.
Cahaba	Good	Probable	Improbable: excess fines.	Fair: too sandy, small stones.
20A Cahaba	Good	Probable	Improbable: excess fines.	Fair: small stones.
22 Annemaine	Poor: low strength.	Improbable: excess fines.	Improbable: excess fines.	Poor: thin layer.
24A, 24B Prentiss	Fair: wetness.	Improbable: excess fines.	Improbable: excess fines.	Good.
25A Stough	Fair: wetness.	Improbable: excess fines.	Improbable: excess fines.	Good.
27, 28 Trebloc	Poor: low strength, wetness.	Improbable: excess fines.	Improbable: excess fines.	Poor: wetness.
30B, 30C McLaurin	Good	Improbable: excess fines.	Improbable: excess fines.	Fair: too sandy, small stones.
31B, 31C Benndale	Good	Improbable: excess fines.	Improbable: excess fines.	Good.
33A Lucedale	Good	Improbable: excess fines.	Improbable: excess fines.	Good.
34E Smithdale	Good	Improbable: excess fines.	Improbable: excess fines.	Fair: small stones, slope.
35B, 35C Ruston	Fair: low strength.	Improbable: excess fines.	Improbable: excess fines.	Fair: small stones.
41A, 41B, 41C Savannah	Fair: low strength, wetness.	Improbable: excess fines.	Improbable: excess fines.	Good.
43B, 43C Malbis	Fair: low strength, wetness.	Improbable: excess fines.	Improbable: excess fines.	Good.
46*: Pits. Udorthents.				
80*: Susquehanna	Poor: low strength, shrink-swell.	Improbable: excess fines.	Improbable: excess fines.	Poor: thin layer.

See footnote at end of table.

TABLE 14.--CONSTRUCTION MATERIALS--Continued

Map symbol and soil name	Roadfill	Sand	Gravel	Topsoil
80*: Petal	Poor: low strength, shrink-swell.	Improbable: excess fines.	Improbable: excess fines.	Fair: thin layer, slope.
81B, 81C--- Freest	Poor: low strength, shrink-swell.	Improbable: excess fines.	Improbable: excess fines.	Poor: thin layer.
83B, 83D--- Susquehanna	Poor: low strength, shrink-swell.	Improbable: excess fines.	Improbable: excess fines.	Poor: thin layer.
90*: Heidel	Good	Improbable: excess fines.	Improbable: excess fines.	Fair: small stones, slope.
McLaurin	Good	Improbable: excess fines.	Improbable: excess fines.	Fair: small stones.
131*: Trebloc	Poor: low strength, wetness.	Improbable: excess fines.	Improbable: excess fines.	Poor: wetness.
Bibb	Poor: wetness.	Improbable: excess fines.	Improbable: excess fines.	Poor: wetness.
213--- Benndale	Good	Improbable: excess fines.	Improbable: excess fines.	Good.
613--- Benndale	Good	Improbable: excess fines.	Improbable: excess fines.	Fair: slope.
652--- Susquehanna	Poor: low strength, shrink-swell.	Improbable: excess fines.	Improbable: excess fines.	Poor: thin layer.
822--- Malbis	Fair: low strength, wetness.	Improbable: excess fines.	Improbable: excess fines.	Good.
842--- Freest	Poor: low strength, shrink-swell.	Improbable: excess fines.	Improbable: excess fines.	Poor: thin layer.
843--- Ruston	Fair: low strength.	Improbable: excess fines.	Improbable: excess fines.	Fair: small stones.
852--- Susquehanna	Poor: low strength, shrink-swell.	Improbable: excess fines.	Improbable: excess fines.	Poor: thin layer.

* See description of the map unit for composition and behavior characteristics of the map unit.

TABLE 15.--WATER MANAGEMENT

[Some terms that describe restrictive soil features are defined in the Glossary. See text for definitions of "slight," "moderate," and "severe." Absence of an entry indicates that the soil was not evaluated. The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation]

Map symbol and soil name	Limitations for--			Features affecting--		
	Pond reservoir areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	Drainage	Terraces and diversions	Grassed waterways
2---------- Jena	Severe: seepage.	Severe: piping, seepage.	Severe: no water.	Deep to water	Favorable------	Droughty.
3*: McLaurin--------- Urban land.	Severe: seepage.	Severe: piping.	Severe: no water.	Deep to water	Favorable------	Droughty.
4*: Malbis---------- Urban land.	Moderate: seepage, slope.	Severe: piping.	Severe: no water.	Deep to water	Favorable------	Favorable.
5*. Urban land						
6---------- Bibb	Moderate: seepage.	Severe: piping, wetness.	Moderate: slow refill.	Flooding-------	Wetness--------	Wetness.
7*: Savannah--------- Urban land.	Moderate: seepage.	Severe: piping.	Severe: no water.	Favorable------	Erodes easily, wetness, rooting depth.	Erodes easily, rooting depth.
11E*: Heidel---------- Benndale---------	Moderate: seepage. Moderate: seepage.	Severe: piping. Severe: piping.	Severe: no water. Severe: no water.	Deep to water Deep to water	Slope---------- Slope----------	Slope. Slope.
15---------- Quitman	Slight---------	Moderate: piping, wetness.	Severe: no water.	Favorable------	Wetness--------	Favorable.
16---------- Bigbee	Severe: seepage.	Severe: seepage, piping.	Severe: cutbanks cave.	Deep to water	Too sandy------	Droughty.
17*: Trebloc---------- Quitman----------	Slight--------- Slight---------	Severe: wetness. Moderate: piping, wetness.	Severe: slow refill. Severe: no water.	Flooding------- Flooding-------	Erodes easily, wetness. Wetness--------	Wetness, erodes easily. Favorable.

See footnote at end of table.

TABLE 15.--WATER MANAGEMENT--Continued

Map symbol and soil name	Limitations for--			Features affecting--		
	Pond reservoir areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	Drainage	Terraces and diversions	Grassed waterways
19*: Harleston	Moderate: seepage.	Severe: piping.	Moderate: deep to water, slow refill.	Flooding	Wetness	Favorable.
Cahaba	Moderate: seepage.	Moderate: thin layer, piping.	Severe: no water.	Deep to water	Favorable	Favorable.
20A Cahaba	Moderate: seepage.	Moderate: thin layer, piping.	Severe: no water.	Deep to water	Favorable	Favorable.
22 Annemaine	Moderate: seepage.	Severe: wetness.	Severe: slow refill.	Percs slowly, flooding.	Wetness, percs slowly.	Percs slowly.
24A Prentiss	Moderate: seepage.	Severe: piping.	Severe: no water.	Favorable	Erodes easily, wetness, rooting depth.	Erodes easily, droughty, rooting depth.
24B Prentiss	Moderate: seepage.	Severe: piping.	Severe: no water.	Slope	Erodes easily, wetness, rooting depth.	Erodes easily, droughty, rooting depth.
25A Stough	Slight	Moderate: piping, wetness.	Severe: no water.	Favorable	Erodes easily, wetness.	Wetness, erodes easily, droughty.
27 Trebloc	Slight	Severe: wetness.	Severe: slow refill.	Favorable	Erodes easily, wetness.	Wetness, erodes easily.
28 Trebloc	Slight	Severe: wetness.	Severe: slow refill.	Flooding	Erodes easily, wetness.	Wetness, erodes easily.
30B, 30C McLaurin	Severe: seepage.	Severe: piping.	Severe: no water.	Deep to water	Favorable	Droughty.
31B, 31C Benndale	Moderate: seepage.	Severe: piping.	Severe: no water.	Deep to water	Favorable	Favorable.
33A Lucedale	Moderate: seepage.	Severe: piping.	Severe: no water.	Deep to water	Favorable	Favorable.
34E Smithdale	Severe: seepage, slope.	Severe: piping.	Severe: no water.	Deep to water	Slope	Slope.
35B, 35C Ruston	Moderate: seepage, slope.	Severe: thin layer.	Severe: no water.	Deep to water	Favorable	Favorable.
41A Savannah	Moderate: seepage.	Severe: piping.	Severe: no water.	Favorable	Erodes easily, wetness, rooting depth.	Erodes easily, rooting depth.
41B, 41C Savannah	Moderate: seepage.	Severe: piping.	Severe: no water.	Slope	Erodes easily, wetness, rooting depth.	Erodes easily, rooting depth.

See footnote at end of table.

TABLE 15.--WATER MANAGEMENT--Continued

Map symbol and soil name	Limitations for--			Features affecting--		
	Pond reservoir areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	Drainage	Terraces and diversions	Grassed waterways
43B, 43C---------- Malbis	Moderate: seepage, slope.	Severe: piping.	Severe: no water.	Deep to water	Favorable------	Favorable.
46*: Pits.						
Udorthents.						
80*: Susquehanna------	Slight---------	Severe: hard to pack.	Severe: no water.	Deep to water	Percs slowly, slope.	Percs slowly, slope.
Petal----------	Slight---------	Moderate: hard to pack, wetness.	Severe: no water.	Percs slowly, slope.	Slope, wetness, percs slowly.	Slope, percs slowly.
81B, 81C---------- Freest	Slight---------	Severe: wetness.	Severe: slow refill.	Percs slowly, slope.	Wetness, percs slowly.	Percs slowly.
83B---------- Susquehanna	Slight---------	Severe: hard to pack.	Severe: no water.	Deep to water	Percs slowly---	Percs slowly.
83D---------- Susquehanna	Slight---------	Severe: hard to pack.	Severe: no water.	Deep to water	Percs slowly, slope.	Percs slowly, slope.
90*: Heidel----------	Moderate: seepage.	Severe: piping.	Severe: no water.	Deep to water	Slope----------	Slope, droughty.
McLaurin---------	Severe: seepage.	Severe: piping.	Severe: no water.	Deep to water	Favorable------	Favorable.
131*: Trebloc----------	Slight---------	Severe: wetness.	Severe: slow refill.	Flooding-------	Erodes easily, wetness.	Wetness, erodes easily.
Bibb----------	Moderate: seepage.	Severe: piping, wetness.	Moderate: slow refill.	Flooding-------	Wetness--------	Wetness.
213---------- Benndale	Moderate: seepage.	Severe: piping.	Severe: no water.	Deep to water	Favorable------	Favorable.
613---------- Benndale	Moderate: seepage.	Severe: piping.	Severe: no water.	Deep to water	Slope----------	Slope.
652---------- Susquehanna	Slight---------	Severe: hard to pack.	Severe: no water.	Deep to water	Percs slowly, slope.	Percs slowly, slope.
822---------- Malbis	Moderate: seepage, slope.	Severe: piping.	Severe: no water.	Deep to water	Favorable------	Favorable.
842---------- Freest	Slight---------	Severe: wetness.	Severe: slow refill.	Percs slowly, slope.	Wetness, percs slowly.	Percs slowly.
843---------- Ruston	Moderate: seepage, slope.	Severe: thin layer.	Severe: no water.	Deep to water	Favorable------	Favorable.

See footnote at end of table.

TABLE 15.--WATER MANAGEMENT--Continued

Map symbol and soil name	Limitations for--			Features affecting--		
	Pond reservoir areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	Drainage	Terraces and diversions	Grassed waterways
852---------- Susquehanna	Slight---------	Severe: hard to pack.	Severe: no water.	Deep to water	Percs slowly---	Percs slowly.

* See description of the map unit for composition and behavior characteristics of the map unit.

TABLE 16.--ENGINEERING INDEX PROPERTIES

[The symbol < means less than; > means more than. Absence of an entry indicates that data were not estimated. Some soils may have Unified classifications and USDA textures in addition to those shown. In general, the dominant classifications and textures are shown]

Map symbol and soil name	Depth	USDA texture	Classification		Fragments > 3 inches	Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO		4	10	40	200		
	In				Pct					Pct	
2---------- Jena	0-9	Fine sandy loam	ML, SM, CL-ML, SM-SC	A-4, A-2-4	0	100	100	60-85	25-55	<22	NP-5
	9-35	Silt loam, very fine sandy loam, loam.	SM, ML, CL-ML, SM-SC	A-4, A-2-4	0	100	100	55-90	25-70	<22	NP-5
	35-62	Fine sandy loam, sandy loam, loamy fine sand.	SM	A-2-4, A-4	0	100	100	50-80	20-50	---	NP
3*:											
McLaurin--------	0-5	Loamy sand-------	SM	A-2	0	90-100	90-100	50-75	15-30	<20	NP-4
	5-38	Sandy loam, fine sandy loam, loam.	SM, SC, SM-SC	A-4	0	90-100	90-100	85-95	36-45	<30	NP-10
	38-48	Loamy fine sand, loamy sand.	SM	A-2	0	90-100	90-100	50-85	15-45	<20	NP-4
	48-62	Sandy loam, sandy clay loam, loam.	SC, ML, CL, SM	A-4, A-6	0	90-100	90-100	70-80	36-55	30-40	6-15
Urban land.											
4*:											
Malbis----------	0-14	Fine sandy loam	SM, ML	A-4	0	100	97-100	92-97	40-62	<30	NP-5
	14-26	Loam, sandy clay loam, clay loam.	CL-ML, CL	A-4, A-6	0	99-100	95-100	91-100	55-70	25-35	5-11
	26-47	Sandy clay loam, clay loam, loam.	ML, CL	A-4, A-6, A-7	0	98-100	96-100	90-100	56-80	29-49	4-15
	47-65	Sandy clay loam, clay loam.	ML, CL	A-4, A-5, A-6, A-7	0	98-100	96-100	90-100	56-80	30-49	4-15
Urban land.											
5*. Urban land											
6---------- Bibb	0-6	Silt loam--------	ML, CL-ML	A-4	0-5	95-100	90-100	80-90	50-80	<25	NP-7
	6-60	Sandy loam, loam, silt loam.	SM, SM-SC, ML, CL-ML	A-2, A-4	0-10	60-100	50-100	40-100	30-90	<30	NP-7
7*:											
Savannah--------	0-11	Loam----------	ML, CL-ML	A-4	0	100	90-100	80-100	60-90	<25	NP-7
	11-23	Sandy clay loam, clay loam, loam.	CL, SC, CL-ML	A-4, A-6	0	98-100	90-100	80-100	40-80	23-40	7-19
	23-60	Loam, clay loam, sandy clay loam.	CL, SC, CL-ML	A-4, A-6, A-7	0	94-100	90-100	60-100	30-80	23-43	7-19
Urban land.											
11E*:											
Heidel----------	0-14	Fine sandy loam	SM	A-4	0	90-100	85-100	70-85	36-45	<30	NP-4
	14-60	Fine sandy loam, sandy loam, loam.	CL-ML, SM-SC, SM	A-4	0	90-100	85-100	60-85	36-55	16-22	3-7

See footnote at end of table.

TABLE 16.--ENGINEERING INDEX PROPERTIES--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Frag-ments > 3 inches	Percentage passing sieve number--				Liquid limit	Plas-ticity index
			Unified	AASHTO		4	10	40	200		
	In				Pct					Pct	
11E*:											
Benndale	0-11	Fine sandy loam, loamy sand.	ML, SM, CL-ML, SM-SC	A-4, A-2-4	0	100	100	60-96	30-55	<25	NP-7
	11-26	Loam, sandy loam, fine sandy loam.	ML, SM, CL-ML, SM-SC	A-4	0	100	100	70-95	40-75	16-22	3-7
	26-53	Loam, sandy loam, sandy clay loam.	ML, SM, CL-ML, SM-SC	A-4, A-6	0	100	100	70-98	40-75	16-38	3-15
	53-60	Loam, sandy loam, loamy sand.	SM, ML, CL-ML, SM-SC	A-2, A-4	0	95-100	95-100	60-95	25-65	<25	NP-5
15	0-8	Fine sandy loam	SM, ML	A-4, A-2	0	100	100	85-100	30-55	<20	NP-3
Quitman	8-19	Fine sandy loam, loam, sandy clay loam.	SC, CL, CL-ML, SM-SC	A-4, A-6	0	100	100	90-100	40-70	20-35	4-15
	19-60	Sandy clay loam, loam, clay loam.	CL, SC	A-6, A-7	0	100	100	90-100	40-65	25-45	11-20
16	0-9	Loamy sand	SM	A-2-4	0	100	95-100	60-90	15-30	---	NP
Bigbee	9-65	Sand, fine sand	SP-SM, SM	A-2-4, A-3	0	85-100	85-100	50-75	5-20	---	NP
17*:											
Trebloc	0-12	Silt loam	ML, CL-ML	A-4	0	100	100	85-100	60-90	<30	NP-7
	12-18	Silt loam, silty clay loam, loam.	CL	A-4, A-6	0	100	100	85-100	85-100	25-40	8-16
	18-60	Silty clay loam, silty clay, clay loam.	CL	A-4, A-6, A-7	0	100	100	85-100	85-100	25-48	8-21
Quitman	0-10	Fine sandy loam	SM, ML	A-4, A-2	0	100	100	85-100	30-55	<20	NP-3
	10-35	Fine sandy loam, loam, sandy clay loam.	SC, CL, CL-ML, SM-SC	A-4, A-6	0	100	100	90-100	40-70	20-35	4-15
	35-65	Sandy clay loam, loam, clay loam.	CL, SC	A-6, A-7	0	100	100	90-100	40-65	25-45	11-20
19*:											
Harleston	0-6	Fine sandy loam	ML, SM, CL-ML, SM-SC	A-2, A-4	0	90-100	85-100	60-85	30-55	<25	NP-7
	6-34	Sandy loam, loam	SC, CL, CL-ML, SM-SC	A-2, A-4	0	90-100	85-100	60-95	30-70	20-30	5-10
	34-62	Sandy loam, loam, sandy clay loam.	SC, CL, CL-ML, SM-SC	A-2, A-4, A-6	0	90-100	85-100	60-95	30-70	20-35	5-13
Cahaba	0-12	Loamy sand	SM	A-2	0-5	95-100	95-100	50-75	15-35	---	NP
	12-41	Sandy clay loam, loam, clay loam.	SC, CL	A-4, A-6	0	90-100	80-100	75-90	40-75	22-35	8-15
	41-65	Sand, loamy sand, sandy loam.	SM, SP-SM	A-2-4	0	95-100	90-100	60-85	10-35	---	NP

See footnote at end of table.

TABLE 16.--ENGINEERING INDEX PROPERTIES--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Frag-ments > 3 inches	Percentage passing sieve number--				Liquid limit	Plas-ticity index
			Unified	AASHTO		4	10	40	200		
	In				Pct					Pct	
20A---------- Cahaba	0-6	Sandy loam-------	SM	A-4, A-2-4	0	95-100	95-100	65-90	30-45	---	NP
	6-33	Sandy clay loam, loam, clay loam.	SC, CL	A-4, A-6	0	90-100	80-100	75-90	40-75	22-35	8-15
	33-65	Sand, loamy sand, sandy loam.	SM, SP-SM	A-2-4	0	95-100	90-100	60-85	10-35	---	NP
22---------- Annemaine	0-6	Silt loam--------	CL, CL-ML	A-4, A-6	0	100	100	90-100	70-90	20-35	5-20
	6-43	Clay, silty clay	CH, MH, CL	A-7	0	95-100	95-100	90-100	80-99	45-70	20-35
	43-60	Sandy clay loam, loam, clay loam.	SC, CL	A-4, A-6	0	95-100	95-100	80-100	36-80	20-35	8-15
24A---------- Prentiss	0-26	Loam----------	ML, CL, CL-ML	A-4	0	100	100	75-100	50-90	<30	NP-10
	26-64	Loam, sandy loam, fine sandy loam.	CL-ML, CL, SC, SM-SC	A-6, A-4	0	100	100	70-100	40-75	20-35	4-12
24B---------- Prentiss	0-27	Loam----------	ML, CL, CL-ML	A-4	0	100	100	75-100	50-90	<30	NP-10
	27-60	Loam, sandy loam, fine sandy loam.	CL-ML, CL, SC, SM-SC	A-6, A-4	0	100	100	70-100	40-75	20-35	4-12
25A---------- Stough	0-7	Fine sandy loam	SM-SC, SM, ML, CL-ML	A-4	0	100	100	65-85	35-65	<25	NP-7
	7-14	Loam, fine sandy loam.	ML, CL, CL-ML	A-4	0	100	100	75-95	50-75	<25	NP-8
	14-60	Sandy loam, sandy clay loam, loam.	SC, CL	A-4, A-6	0	100	100	65-90	40-65	25-40	8-15
27---------- Trebloc	0-9	Silt loam--------	ML, CL-ML	A-4	0	100	100	85-100	60-90	<30	NP-7
	9-60	Silt loam, silty clay loam, loam.	CL	A-4, A-6	0	100	100	85-100	85-100	25-40	8-16
28---------- Trebloc	0-3	Silt loam--------	ML, CL-ML	A-4	0	100	100	85-100	60-90	<30	NP-7
	3-40	Silt loam, silty clay loam, loam.	CL	A-4, A-6	0	100	100	85-100	85-100	25-40	8-16
	40-60	Silty clay loam, silty clay, clay loam.	CL	A-4, A-6, A-7	0	100	100	85-100	85-100	25-48	8-21
30B---------- McLaurin	0-5	Loamy sand-------	SM	A-2	0	90-100	90-100	50-75	15-30	<20	NP-4
	5-36	Sandy loam, fine sandy loam, loam.	SM, SC, SM-SC	A-4	0	90-100	90-100	85-95	36-45	<30	NP-10
	36-60	Sandy loam, sandy clay loam, loam.	SC, ML, CL, SM	A-4, A-6	0	90-100	90-100	70-80	36-55	30-40	6-15
30C---------- McLaurin	0-10	Loamy sand-------	SM	A-2	0	90-100	90-100	50-75	15-30	<20	NP-4
	10-38	Sandy loam, fine sandy loam, loam.	SM, SC, SM-SC	A-4	0	90-100	90-100	85-95	36-45	<30	NP-10
	38-65	Sandy loam, sandy clay loam, loam.	SC, ML, CL, SM	A-4, A-6	0	90-100	90-100	70-80	36-55	30-40	6-15

See footnote at end of table.

TABLE 16.--ENGINEERING INDEX PROPERTIES--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments > 3 inches	Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO		4	10	40	200		
	In				Pct					Pct	
31B---------- Benndale	0-10	Fine sandy loam	ML, SM, CL-ML, SM-SC	A-4, A-2-4	0	100	100	60-96	30-55	<25	NP-7
	10-42	Loam, sandy loam, fine sandy loam.	ML, SM, CL-ML, SM-SC	A-4	0	100	100	70-95	40-75	16-22	3-7
	42-60	Loam, sandy loam, sandy clay loam.	ML, SM, CL-ML, SM-SC	A-4, A-6	0	100	100	70-98	40-75	16-38	3-15
31C---------- Benndale	0-10	Fine sandy loam	ML, SM, CL-ML, SM-SC	A-4, A-2-4	0	100	100	60-96	30-55	<25	NP-7
	10-44	Loam, sandy loam, fine sandy loam.	ML, SM, CL-ML, SM-SC	A-4	0	100	100	70-95	40-75	16-22	3-7
	44-60	Loam, sandy loam, sandy clay loam.	ML, SM, CL-ML, SM-SC	A-4, A-6	0	100	100	70-98	40-75	16-38	3-15
33A---------- Lucedale	0-7	Loam----------	SM, ML	A-2, A-4	0	100	95-100	80-95	25-65	<30	NP-3
	7-70	Sandy clay loam, clay loam, loam.	CL-ML, SC, CL, SM-SC	A-4, A-6, A-2	0	95-100	95-100	80-100	30-75	25-40	4-15
34E---------- Smithdale	0-6	Fine sandy loam	SM, SM-SC	A-4, A-2	0	100	85-100	60-95	28-49	<20	NP-5
	6-53	Clay loam, sandy clay loam, loam.	SM-SC, SC, CL, CL-ML	A-6, A-4	0	100	85-100	80-96	45-75	23-38	7-16
	53-68	Loam, sandy loam	SM, ML, CL, SC	A-4	0	100	85-100	65-95	36-70	<30	NP-10
35B---------- Ruston	0-10	Fine sandy loam	SM, ML	A-4, A-2-4	0	85-100	78-100	65-100	30-75	<20	NP-3
	10-24	Sandy clay loam, loam, clay loam.	SC, CL	A-6	0	85-100	78-100	70-100	36-75	30-40	11-20
	24-51	Fine sandy loam, sandy loam, loamy sand.	SM, ML, CL-ML, SM-SC	A-4, A-2-4	0	85-100	78-100	65-100	30-75	<27	NP-7
	51-60	Sandy clay loam, loam, clay loam.	SC, CL	A-6	0	85-100	78-100	70-100	36-75	30-42	11-20
35C---------- Ruston	0-10	Fine sandy loam	SM, ML	A-4, A-2-4	0	85-100	78-100	65-100	30-75	<20	NP-3
	10-33	Sandy clay loam, loam, clay loam.	SC, CL	A-6	0	85-100	78-100	70-100	36-75	30-40	11-20
	33-65	Fine sandy loam, sandy loam, loamy sand.	SM, ML, CL-ML, SM-SC	A-4, A-2-4	0	85-100	78-100	65-100	30-75	<27	NP-7
41A---------- Savannah	0-7	Loam----------	ML, CL-ML	A-4	0	100	90-100	80-100	60-90	<25	NP-7
	7-27	Sandy clay loam, clay loam, loam.	CL, SC, CL-ML	A-4, A-6	0	98-100	90-100	80-100	40-80	23-40	7-19
	27-60	Loam, clay loam, sandy clay loam.	CL, SC, CL-ML	A-4, A-6, A-7	0	94-100	90-100	60-100	30-80	23-43	7-19
41B---------- Savannah	0-8	Loam----------	ML, CL-ML	A-4	0	100	90-100	80-100	60-90	<25	NP-7
	8-21	Sandy clay loam, clay loam, loam.	CL, SC, CL-ML	A-4, A-6	0	98-100	90-100	80-100	40-80	23-40	7-19
	21-62	Loam, clay loam, sandy clay loam.	CL, SC, CL-ML	A-4, A-6, A-7	0	94-100	90-100	60-100	30-80	23-43	7-19

See footnote at end of table.

TABLE 16.--ENGINEERING INDEX PROPERTIES--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments > 3 inches	Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO		4	10	40	200		
	In				Pct					Pct	
41C---------- Savannah	0-7	Loam----------	ML, CL-ML	A-4	0	100	90-100	80-100	60-90	<25	NP-7
	7-24	Sandy clay loam, clay loam, loam.	CL, SC, CL-ML	A-4, A-6	0	98-100	90-100	80-100	40-80	23-40	7-19
	24-60	Loam, clay loam, sandy clay loam.	CL, SC, CL-ML	A-4, A-6, A-7	0	94-100	90-100	60-100	30-80	23-43	7-19
43B---------- Malbis	0-5	Fine sandy loam	SM, ML	A-4	0	100	97-100	92-97	40-62	<30	NP-5
	5-18	Loam, sandy clay loam, clay loam.	CL-ML, CL	A-4, A-6	0	99-100	95-100	91-100	55-70	25-35	5-11
	18-38	Sandy clay loam, clay loam, loam.	ML, CL	A-4, A-6, A-7	0	98-100	96-100	90-100	56-80	29-49	4-15
	38-60	Sandy clay loam, clay loam.	ML, CL	A-4, A-5, A-6, A-7	0	98-100	96-100	90-100	56-80	30-49	4-15
43C---------- Malbis	0-16	Fine sandy loam	SM, ML	A-4	0	100	97-100	92-97	40-62	<30	NP-5
	16-20	Loam, sandy clay loam, clay loam.	CL-ML, CL	A-4, A-6	0	99-100	95-100	91-100	55-70	25-35	5-11
	20-24	Sandy clay loam, clay loam, loam.	ML, CL	A-4, A-6, A-7	0	98-100	96-100	90-100	56-80	29-49	4-15
	24-60	Sandy clay loam, clay loam.	ML, CL	A-4, A-5, A-6, A-7	0	98-100	96-100	90-100	56-80	30-49	4-15
46*: Pits.											
Udorthents.											
80*: Susquehanna-----	0-12	Fine sandy loam	ML, SM	A-4	0	100	100	65-90	40-55	---	NP
	12-64	Clay, silty clay loam, silty clay.	CH	A-7	0	100	100	88-100	80-98	50-90	28-56
Petal----------	0-14	Fine sandy loam	SM, CL, ML, CL-ML	A-4	0	100	95-100	60-90	40-70	<30	NP-8
	14-24	Loam, sandy clay loam, clay loam.	CL	A-4, A-6	0	100	95-100	80-95	55-75	25-40	7-20
	24-64	Clay loam, silty clay, clay.	CL, CH	A-6, A-7	0	100	95-100	90-100	80-95	38-55	20-30
81B---------- Freest	0-9	Fine sandy loam	SM, CL, ML, CL-ML	A-4	0	100	95-100	60-90	40-70	<30	NP-8
	9-26	Loam, sandy clay loam.	CL	A-4, A-6	0	100	95-100	80-95	55-75	25-40	7-20
	26-60	Clay loam, clay, silty clay.	CL, CH	A-7	0	100	95-100	90-100	80-95	41-55	20-30
81C---------- Freest	0-7	Fine sandy loam	SM, CL, ML, CL-ML	A-4	0	100	95-100	60-90	40-70	<30	NP-8
	7-26	Loam, sandy clay loam.	CL	A-4, A-6	0	100	95-100	80-95	55-75	25-40	7-20
	26-62	Clay loam, clay, silty clay.	CL, CH	A-7	0	100	95-100	90-100	80-95	41-55	20-30
83B---------- Susquehanna	0-5	Fine sandy loam	ML, SM	A-4	0	100	100	65-90	40-55	---	NP
	5-60	Clay, silty clay loam, silty clay.	CH	A-7	0	100	100	88-100	80-98	50-90	28-56

See footnote at end of table.

TABLE 16.--ENGINEERING INDEX PROPERTIES--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments > 3 inches	Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO		4	10	40	200		
	In				Pct					Pct	
83D---------- Susquehanna	0-12	Fine sandy loam	ML, SM	A-4	0	100	100	65-90	40-55	---	NP
	12-64	Clay, silty clay loam, silty clay.	CH	A-7	0	100	100	88-100	80-98	50-90	28-56
90*:											
Heidel----------	0-12	Loamy sand-------	SM	A-2-4	0	90-100	85-100	50-75	15-30	<20	NP-3
	12-68	Fine sandy loam, sandy loam, loam.	CL-ML, SM-SC, SM	A-4	0	90-100	85-100	60-85	36-55	16-22	3-7
McLaurin---------	0-11	Fine sandy loam	SM	A-4	0	90-100	90-100	70-85	36-45	<30	NP-4
	11-38	Sandy loam, fine sandy loam, loam.	SM, SC, SM-SC	A-4	0	90-100	90-100	85-95	36-45	<30	NP-10
	38-60	Sandy loam, sandy clay loam, loam.	SC, ML, CL, SM	A-4, A-6	0	90-100	90-100	70-80	36-55	30-40	6-15
131*:											
Trebloc---------	0-6	Silt loam--------	ML, CL-ML	A-4	0	100	100	85-100	60-90	<30	NP-7
	6-65	Silt loam, silty clay loam, loam.	CL	A-4, A-6	0	100	100	85-100	85-100	25-40	8-16
	23-65	Silty clay loam, silty clay, clay loam.	CL	A-4, A-6, A-7	0	100	100	85-100	85-100	25-48	8-21
Bibb----------	0-2	Fine sandy loam	SM, SM-SC, ML, CL-ML	A-2, A-4	0-5	95-100	90-100	60-90	30-60	<25	NP-7
	2-62	Sandy loam, loam, silt loam.	SM, SM-SC, ML, CL-ML	A-2, A-4	0-10	60-100	50-100	40-100	30-90	<30	NP-7
213, 613--------- Benndale	0-5	Fine sandy loam	ML, SM, CL-ML, SM-SC	A-4, A-2-4	0	100	100	60-96	30-55	<25	NP-7
	5-50	Loam, sandy loam, fine sandy loam.	ML, SM, CL-ML, SM-SC	A-4	0	100	100	70-95	40-75	16-22	3-7
	50-65	Loam, sandy loam, sandy clay loam.	ML, SM, CL-ML, SM-SC	A-4, A-6	0	100	100	70-98	40-75	16-38	3-15
652---------- Susquehanna	0-10	Fine sandy loam	ML, SM	A-4	0	100	100	65-90	40-55	---	NP
	10-65	Clay, silty clay loam, silty clay.	CH	A-7	0	100	100	88-100	80-98	50-90	28-56
822---------- Malbis	0-8	Fine sandy loam	SM, ML	A-4	0	100	97-100	92-97	40-62	<30	NP-5
	8-33	Loam, sandy clay loam, clay loam.	CL-ML, CL	A-4, A-6	0	99-100	95-100	91-100	55-70	25-35	5-11
	33-49	Sandy clay loam, clay loam, loam.	ML, CL	A-4, A-6, A-7	0	98-100	96-100	90-100	56-80	29-49	4-15
	49-62	Sandy clay loam, clay loam.	ML, CL	A-4, A-5, A-6, A-7	0	98-100	96-100	90-100	56-80	30-49	4-15
842---------- Freest	0-10	Fine sandy loam	SM, CL, ML, CL-ML	A-4	0	100	95-100	60-90	40-70	<30	NP-8
	10-32	Loam, sandy clay loam.	CL	A-4, A-6	0	100	95-100	80-95	55-75	25-40	7-20
	32-60	Clay loam, clay, silty clay.	CL, CH	A-7	0	100	95-100	90-100	80-95	41-55	20-30

See footnote at end of table.

TABLE 16.--ENGINEERING INDEX PROPERTIES--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Frag-ments > 3 inches	Percentage passing sieve number--				Liquid limit	Plas-ticity index
			Unified	AASHTO		4	10	40	200		
	In				Pct					Pct	
843---------- Ruston	0-15	Fine sandy loam	SM, ML	A-4, A-2-4	0	85-100	78-100	65-100	30-75	<20	NP-3
	15-33	Sandy clay loam, loam, clay loam.	SC, CL	A-6	0	85-100	78-100	70-100	36-75	30-40	11-20
	33-48	Fine sandy loam, sandy loam, loamy sand.	SM, ML, CL-ML, SM-SC	A-4, A-2-4	0	85-100	78-100	65-100	30-75	<27	NP-7
	48-60	Sandy clay loam, loam, clay loam.	SC, CL	A-6	0	85-100	78-100	70-100	36-75	30-42	11-20
852---------- Susquehanna	0-10	Fine sandy loam	ML, SM	A-4	0	100	100	65-90	40-55	---	NP
	10-60	Clay, silty clay loam, silty clay.	CH	A-7	0	100	100	88-100	80-98	50-90	28-56

* See description of the map unit for composition and behavior characteristics of the map unit.

TABLE 17.--PHYSICAL AND CHEMICAL PROPERTIES OF THE SOILS

[The symbol < means less than; > means more than. Entries under "Erosion factors--T" apply to the entire profile. Entries under "Organic matter" apply only to the surface layer. Absence of an entry indicates that data were not available or were not estimated]

Map symbol and soil name	Depth	Clay	Moist bulk density	Permeability	Available water capacity	Soil reaction	Shrink-swell potential	Erosion factors		Organic matter
								K	T	
	In	Pct	G/cc	In/hr	In/in	pH				Pct
2----------	0-9	10-20	1.30-1.70	0.6-2.0	0.12-0.20	4.5-6.0	Low----------	0.28	5	---
Jena	9-35	10-18	1.40-1.80	0.6-2.0	0.10-0.20	4.5-5.5	Low----------	0.28		
	35-62	5-20	1.35-1.65	2.0-6.0	0.08-0.14	4.5-5.5	Low----------	0.24		
3*:										
McLaurin--------	0-5	1-5	1.30-1.70	6.0-20	0.05-0.10	4.5-5.5	Very low-----	0.17	5	.5-2
	5-38	10-18	1.40-1.60	0.6-2.0	0.10-0.15	4.5-5.5	Low----------	0.20		
	38-48	5-15	1.30-1.70	2.0-6.0	0.05-0.10	4.5-5.5	Very low-----	0.20		
	48-62	5-27	1.40-1.60	0.6-2.0	0.10-0.15	4.5-5.5	Low----------	0.20		
Urban land.										
4*:										
Malbis----------	0-14	10-25	1.30-1.60	0.6-2.0	0.10-0.15	4.5-6.0	Low----------	0.24	5	.5-1
	14-26	18-33	1.30-1.70	0.6-2.0	0.12-0.20	4.5-5.5	Low----------	0.28		
	26-47	20-35	1.40-1.60	0.6-2.0	0.12-0.17	4.5-5.5	Low----------	0.28		
	47-65	20-35	1.45-1.70	0.2-0.6	0.06-0.12	4.5-5.5	Low----------	0.28		
Urban land.										
5*.										
Urban land										
6----------	0-6	2-18	1.20-1.55	0.6-2.0	0.15-0.20	4.5-5.5	Low----------	0.28	5	.5-2
Bibb	6-60	2-18	1.30-1.60	0.6-2.0	0.12-0.20	4.5-5.5	Low----------	0.37		
7*:										
Savannah--------	0-11	3-16	1.45-1.65	0.6-2.0	0.16-0.20	3.6-5.5	Low----------	0.37	3	.5-3
	11-23	18-32	1.55-1.75	0.6-2.0	0.13-0.20	3.6-5.5	Low----------	0.28		
	23-60	18-32	1.60-1.80	0.2-0.6	0.05-0.10	3.6-5.5	Low----------	0.24		
Urban land.										
11E*:										
Heidel----------	0-14	1-10	1.30-1.70	0.6-2.0	0.10-0.15	4.5-5.5	Low----------	0.20	5	.5-2
	14-60	10-18	1.30-1.70	0.6-2.0	0.10-0.15	4.5-5.5	Low----------	0.20		
Benndale--------	0-11	6-14	1.45-1.55	0.6-2.0	0.10-0.15	4.5-5.5	Low----------	0.20	5	1-3
	11-26	10-18	1.55-1.65	0.6-2.0	0.12-0.18	4.5-5.5	Low----------	0.28		
	26-53	14-28	1.55-1.65	0.6-2.0	0.12-0.18	4.5-5.5	Low----------	0.32		
	53-60	6-20	1.55-1.65	2.0-6.0	0.10-0.15	4.5-5.5	Low----------	0.28		
15----------	0-8	5-15	1.40-1.55	0.6-2.0	0.13-0.16	4.5-5.5	Low----------	0.28	5	1-3
Quitman	8-19	18-35	1.55-1.65	0.6-2.0	0.15-0.20	4.5-5.5	Low----------	0.28		
	19-60	18-35	1.50-1.60	0.2-0.6	0.10-0.18	4.5-5.5	Low----------	0.28		
16----------	0-9	4-10	1.40-1.50	6.0-20	0.05-0.10	4.5-6.0	Low----------	0.17	5	.5-2
Bigbee	9-65	1-10	1.40-1.50	6.0-20	0.05-0.08	4.5-6.0	Low----------	0.17		
17*:										
Trebloc---------	0-12	5-20	1.40-1.50	0.6-2.0	0.16-0.20	4.5-5.5	Low----------	0.43	5	1-3
	12-18	20-32	1.45-1.55	0.2-0.6	0.15-0.20	4.5-5.5	Moderate-----	0.37		
	18-60	20-45	1.45-1.55	0.2-0.6	0.14-0.18	4.5-5.5	Moderate-----	0.37		

See footnote at end of table.

TABLE 17.--PHYSICAL AND CHEMICAL PROPERTIES OF THE SOILS--Continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Permeability	Available water capacity	Soil reaction	Shrink-swell potential	Erosion factors		Organic matter
								K	T	
	In	Pct	G/cc	In/hr	In/in	pH				Pct
17*:										
Quitman	0-10	5-15	1.40-1.55	0.6-2.0	0.13-0.16	4.5-5.5	Low	0.28	5	1-3
	10-35	18-35	1.55-1.65	0.6-2.0	0.15-0.20	4.5-5.5	Low	0.28		
	35-65	18-35	1.50-1.60	0.2-0.6	0.10-0.18	4.5-5.5	Low	0.28		
19*:										
Harleston	0-6	2-8	1.25-1.35	0.6-6.0	0.08-0.16	3.6-5.5	Low	0.20	5	2-5
	6-34	8-18	1.55-1.65	0.6-2.0	0.13-0.16	4.5-5.5	Low	0.32		
	34-62	8-27	1.55-1.65	0.6-2.0	0.13-0.16	4.5-5.5	Low	0.32		
Cahaba	0-12	2-12	1.40-1.70	6.0-20	0.05-0.10	4.5-6.0	Low	0.15	5	.5-2
	12-41	18-35	1.35-1.60	0.6-2.0	0.12-0.15	4.5-6.0	Low	0.28		
	41-65	4-20	1.40-1.70	2.0-20	0.05-0.10	4.5-6.0	Low	0.24		
20A	0-6	7-17	1.35-1.60	2.0-6.0	0.10-0.14	4.5-6.0	Low	0.24	5	.5-2
Cahaba	6-33	18-35	1.35-1.60	0.6-2.0	0.12-0.15	4.5-6.0	Low	0.28		
	33-65	4-20	1.40-1.70	2.0-20	0.05-0.10	4.5-6.0	Low	0.24		
22	0-6	10-20	1.30-1.55	0.6-2.0	0.14-0.20	4.5-6.5	Low	0.37	4	.5-1
Annemaine	6-43	40-60	1.25-1.40	0.06-0.2	0.14-0.18	4.5-5.5	Moderate	0.37		
	43-60	20-35	1.30-1.60	0.2-0.6	0.14-0.18	4.5-5.5	Low	0.37		
24A	0-26	5-18	1.50-1.60	0.6-2.0	0.12-0.16	4.5-5.5	Low	0.37	3	1-3
Prentiss	26-64	10-20	1.65-1.75	0.2-0.6	0.06-0.09	4.5-5.5	Low	0.24		
24B	0-27	5-18	1.50-1.60	0.6-2.0	0.12-0.16	4.5-5.5	Low	0.37	3	1-3
Prentiss	27-60	10-20	1.65-1.75	0.2-0.6	0.06-0.09	4.5-5.5	Low	0.24		
25A	0-7	5-15	1.40-1.55	0.6-2.0	0.12-0.18	4.5-5.5	Low	0.37	3	---
Stough	7-14	8-18	1.45-1.60	0.2-0.6	0.07-0.11	4.5-5.5	Low	0.37		
	14-60	5-27	1.55-1.65	0.2-0.6	0.07-0.11	4.5-5.5	Low	0.37		
27	0-9	5-20	1.40-1.50	0.6-2.0	0.16-0.20	4.5-5.5	Low	0.43	5	1-3
Trebloc	9-60	20-32	1.45-1.55	0.2-0.6	0.15-0.20	4.5-5.5	Moderate	0.37		
28	0-3	5-20	1.40-1.50	0.6-2.0	0.16-0.20	4.5-5.5	Low	0.43	5	1-3
Trebloc	3-40	20-32	1.45-1.55	0.2-0.6	0.15-0.20	4.5-5.5	Moderate	0.37		
	40-60	20-45	1.45-1.55	0.2-0.6	0.14-0.18	4.5-5.5	Moderate	0.37		
30B	0-5	1-5	1.30-1.70	6.0-20	0.05-0.10	4.5-5.5	Very low	0.17	5	.5-2
McLaurin	5-36	10-18	1.40-1.60	0.6-2.0	0.10-0.15	4.5-5.5	Low	0.20		
	36-60	5-27	1.40-1.60	0.6-2.0	0.10-0.15	4.5-5.5	Low	0.20		
30C	0-10	1-5	1.30-1.70	6.0-20	0.05-0.10	4.5-5.5	Very low	0.17	5	.5-2
McLaurin	10-38	10-18	1.40-1.60	0.6-2.0	0.10-0.15	4.5-5.5	Low	0.20		
	38-65	5-27	1.40-1.60	0.6-2.0	0.10-0.15	4.5-5.5	Low	0.20		
31B	0-4	6-14	1.45-1.55	0.6-2.0	0.10-0.15	4.5-5.5	Low	0.20	5	1-3
Benndale	4-42	10-18	1.55-1.65	0.6-2.0	0.12-0.18	4.5-5.5	Low	0.28		
	42-60	14-28	1.55-1.65	0.6-2.0	0.12-0.18	4.5-5.5	Low	0.32		
31C	0-10	6-14	1.45-1.55	0.6-2.0	0.10-0.15	4.5-5.5	Low	0.20	5	1-3
Benndale	10-44	10-18	1.55-1.65	0.6-2.0	0.12-0.18	4.5-5.5	Low	0.28		
	44-60	14-28	1.55-1.65	0.6-2.0	0.12-0.18	4.5-5.5	Low	0.32		
33A	0-7	1-10	1.40-1.55	0.6-2.0	0.15-0.20	5.1-6.5	Low	0.24	5	.5-2
Lucedale	7-70	20-30	1.55-1.70	0.6-2.0	0.14-0.18	4.5-5.5	Low	0.24		
34E	0-6	2-15	1.40-1.50	2.0-6.0	0.14-0.16	4.5-5.5	Low	0.28	5	.5-2
Smithdale	6-53	18-33	1.40-1.55	0.6-2.0	0.15-0.17	4.5-5.5	Low	0.24		
	53-68	12-27	1.40-1.55	2.0-6.0	0.14-0.16	4.5-5.5	Low	0.28		

See footnote at end of table.

TABLE 17.--PHYSICAL AND CHEMICAL PROPERTIES OF THE SOILS--Continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Permeability	Available water capacity	Soil reaction	Shrink-swell potential	Erosion factors		Organic matter
								K	T	
	In	Pct	G/cc	In/hr	In/in	pH				Pct
35B----------	0-10	5-20	1.30-1.70	0.6-2.0	0.09-0.16	4.5-6.5	Low----------	0.28	5	.5-2
Ruston	10-24	18-35	1.40-1.80	0.6-2.0	0.12-0.17	4.5-6.0	Low----------	0.28		
	24-51	10-20	1.30-1.70	0.6-2.0	0.12-0.15	4.5-6.0	Low----------	0.32		
	51-60	15-38	1.40-1.70	0.6-2.0	0.12-0.17	4.5-6.0	Low----------	0.28		
35C----------	0-10	5-20	1.30-1.70	0.6-2.0	0.09-0.16	4.5-6.5	Low----------	0.28	5	.5-2
Ruston	10-33	18-35	1.40-1.80	0.6-2.0	0.12-0.17	4.5-6.0	Low----------	0.28		
	33-65	10-20	1.30-1.70	0.6-2.0	0.12-0.15	4.5-6.0	Low----------	0.32		
41A----------	0-7	3-16	1.45-1.65	0.6-2.0	0.16-0.20	3.6-5.5	Low----------	0.37	3	.5-3
Savannah	7-27	18-32	1.55-1.75	0.6-2.0	0.13-0.20	3.6-5.5	Low----------	0.28		
	27-60	18-32	1.60-1.80	0.2-0.6	0.05-0.10	3.6-5.5	Low----------	0.24		
41B----------	0-8	3-16	1.45-1.65	0.6-2.0	0.16-0.20	3.6-5.5	Low----------	0.37	3	.5-3
Savannah	8-21	18-32	1.55-1.75	0.6-2.0	0.13-0.20	3.6-5.5	Low----------	0.28		
	21-62	18-32	1.60-1.80	0.2-0.6	0.05-0.10	3.6-5.5	Low----------	0.24		
41C----------	0-7	3-16	1.45-1.65	0.6-2.0	0.16-0.20	3.6-5.5	Low----------	0.37	3	.5-3
Savannah	7-24	18-32	1.55-1.75	0.6-2.0	0.13-0.20	3.6-5.5	Low----------	0.28		
	24-60	18-32	1.60-1.80	0.2-0.6	0.05-0.10	3.6-5.5	Low----------	0.24		
43B----------	0-5	10-25	1.30-1.60	0.6-2.0	0.10-0.15	4.5-6.0	Low----------	0.24	5	.5-1
Malbis	5-18	18-33	1.30-1.70	0.6-2.0	0.12-0.20	4.5-5.5	Low----------	0.28		
	18-38	20-35	1.40-1.60	0.6-2.0	0.12-0.17	4.5-5.5	Low----------	0.28		
	38-60	20-35	1.45-1.70	0.2-0.6	0.06-0.12	4.5-5.5	Low----------	0.28		
43C----------	0-16	10-25	1.30-1.60	0.6-2.0	0.10-0.15	4.5-6.0	Low----------	0.24	5	.5-1
Malbis	16-20	18-33	1.30-1.70	0.6-2.0	0.12-0.20	4.5-5.5	Low----------	0.28		
	20-24	20-35	1.40-1.60	0.6-2.0	0.12-0.17	4.5-5.5	Low----------	0.28		
	24-60	20-35	1.45-1.70	0.2-0.6	0.06-0.12	4.5-5.5	Low----------	0.28		
46*:										
Pits.										
Udorthents.										
80*:										
Susquehanna-----	0-12	2-12	1.50-1.55	0.6-2.0	0.10-0.15	4.5-5.5	Low----------	0.28	5	.5-2
	12-64	35-60	1.25-1.50	<0.06	0.15-0.20	4.5-5.5	High---------	0.32		
Petal----------	0-14	16-25	1.40-1.50	0.6-2.0	0.10-0.15	4.5-5.5	Low----------	0.28	5	.5-2
	14-24	20-35	1.45-1.55	0.2-0.6	0.15-0.18	4.5-5.5	Moderate-----	0.32		
	24-64	30-50	1.40-1.55	0.06-0.2	0.15-0.18	4.5-5.5	High---------	0.32		
81B----------	0-9	3-10	1.40-1.50	0.6-2.0	0.10-0.15	4.5-5.5	Low----------	0.28	5	.5-2
Freest	9-26	10-25	1.40-1.50	0.2-0.6	0.15-0.18	4.5-6.0	Moderate-----	0.32		
	26-60	27-50	1.40-1.55	0.06-0.2	0.15-0.18	4.5-7.3	High---------	0.28		
81C----------	0-7	3-10	1.40-1.50	0.6-2.0	0.10-0.15	4.5-5.5	Low----------	0.28	5	.5-2
Freest	7-26	10-25	1.40-1.50	0.2-0.6	0.15-0.18	4.5-6.0	Moderate-----	0.32		
	26-62	27-50	1.40-1.55	0.06-0.2	0.15-0.18	4.5-7.3	High---------	0.28		
83B----------	0-5	2-12	1.50-1.55	0.6-2.0	0.10-0.15	4.5-5.5	Low----------	0.28	5	.5-2
Susquehanna	5-60	35-60	1.25-1.50	<0.06	0.15-0.20	4.5-5.5	High---------	0.32		
83D----------	0-12	2-12	1.50-1.55	0.6-2.0	0.10-0.15	4.5-5.5	Low----------	0.28	5	.5-2
Susquehanna	12-64	35-60	1.25-1.50	<0.06	0.15-0.20	4.5-5.5	High---------	0.32		
90*:										
Heidel----------	0-12	1-10	1.30-1.70	6.0-20	0.05-0.10	4.5-5.5	Low----------	0.17	5	.5-2
	12-68	10-18	1.30-1.70	0.6-2.0	0.10-0.15	4.5-5.5	Low----------	0.20		

See footnote at end of table.

TABLE 17.--PHYSICAL AND CHEMICAL PROPERTIES OF THE SOILS--Continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Permeability	Available water capacity	Soil reaction	Shrink-swell potential	Erosion factors		Organic matter
								K	T	
	In	Pct	G/cc	In/hr	In/in	pH				Pct
90*:										
McLaurin--------	0-11	5-10	1.40-1.60	0.6-2.0	0.12-0.15	4.5-5.5	Low----------	0.20	5	---
	11-38	10-18	1.40-1.60	0.6-2.0	0.10-0.15	4.5-5.5	Low----------	0.20		
	38-60	5-27	1.40-1.60	0.6-2.0	0.10-0.15	4.5-5.5	Low----------	0.20		
131*:										
Trebloc----------	0-6	5-20	1.40-1.50	0.6-2.0	0.16-0.20	4.5-5.5	Low----------	0.43	5	1-3
	6-65	20-32	1.45-1.55	0.2-0.6	0.15-0.20	4.5-5.5	Moderate-----	0.37		
	23-65	20-45	1.45-1.55	0.2-0.6	0.14-0.18	4.5-5.5	Moderate-----	0.37		
Bibb------------	0-2	2-18	1.25-1.55	0.6-2.0	0.12-0.18	4.5-5.5	Low----------	0.20	5	.5-2
	2-62	2-18	1.30-1.60	0.6-2.0	0.12-0.20	4.5-5.5	Low----------	0.37		
213, 613---------	0-5	6-14	1.45-1.55	0.6-2.0	0.10-0.15	4.5-5.5	Low----------	0.20	5	1-3
Benndale	5-50	10-18	1.55-1.65	0.6-2.0	0.12-0.18	4.5-5.5	Low----------	0.28		
	50-65	14-28	1.55-1.65	0.6-2.0	0.12-0.18	4.5-5.5	Low----------	0.32		
652--------------	0-10	2-12	1.50-1.55	0.6-2.0	0.10-0.15	4.5-5.5	Low----------	0.28	5	.5-2
Susquehanna	10-65	35-60	1.25-1.50	<0.06	0.15-0.20	4.5-5.5	High---------	0.32		
822--------------	0-8	10-25	1.30-1.60	0.6-2.0	0.10-0.15	4.5-6.0	Low----------	0.24	5	.5-1
Malbis	8-33	18-33	1.30-1.70	0.6-2.0	0.12-0.20	4.5-5.5	Low----------	0.28		
	33-49	20-35	1.40-1.60	0.6-2.0	0.12-0.17	4.5-5.5	Low----------	0.28		
	49-62	20-35	1.45-1.70	0.2-0.6	0.06-0.12	4.5-5.5	Low----------	0.28		
842--------------	0-10	3-10	1.40-1.50	0.6-2.0	0.10-0.15	4.5-5.5	Low----------	0.28	5	.5-2
Freest	10-32	10-25	1.40-1.50	0.2-0.6	0.15-0.18	4.5-6.0	Moderate-----	0.32		
	32-60	27-50	1.40-1.55	0.06-0.2	0.15-0.18	4.5-7.3	High---------	0.28		
843--------------	0-15	5-20	1.30-1.70	0.6-2.0	0.09-0.16	4.5-6.5	Low----------	0.28	5	.5-2
Ruston	15-33	18-35	1.40-1.80	0.6-2.0	0.12-0.17	4.5-6.0	Low----------	0.28		
	33-48	10-20	1.30-1.70	0.6-2.0	0.12-0.15	4.5-6.0	Low----------	0.32		
	48-60	15-38	1.40-1.70	0.6-2.0	0.12-0.17	4.5-6.0	Low----------	0.28		
852--------------	0-10	2-12	1.50-1.55	0.6-2.0	0.10-0.15	4.5-5.5	Low----------	0.28	5	.5-2
Susquehanna	10-60	35-60	1.25-1.50	<0.06	0.15-0.20	4.5-5.5	High---------	0.32		

* See description of the map unit for composition and behavior characteristics of the map unit.

TABLE 18.--SOIL AND WATER FEATURES

["Flooding" and "water table" and terms such as "rare," "brief," "apparent," and "perched" are explained in the text. The symbol < means less than; > means more than. Absence of an entry indicates that the feature is not a concern or that data were not estimated]

Map symbol and soil name	Hydrologic group	Flooding			High water table			Risk of corrosion	
		Frequency	Duration	Months	Depth	Kind	Months	Uncoated steel	Concrete
					Ft				
2---------- Jena	B	Frequent----	Very brief to long.	Dec-Apr	>6.0	---	---	Low------	High.
3*: McLaurin---------	B	None--------	---	---	>6.0	---	---	Low------	Moderate.
Urban land.									
4*: Malbis----------	B	None--------	---	---	2.5-4.0	Perched	Dec-Mar	Moderate	Moderate.
Urban land.									
5*. Urban land									
6---------- Bibb	C	Frequent----	Brief-----	Dec-May	0.5-1.5	Apparent	Dec-Apr	High-----	Moderate.
7*: Savannah---------	C	None--------	---	---	1.5-3.0	Perched	Jan-Mar	Moderate	High.
Urban land.									
11E*: Heidel----------	B	None--------	---	---	>6.0	---	---	Low------	High.
Benndale---------	B	None--------	---	---	>6.0	---	---	Low------	Moderate.
15---------- Quitman	C	None--------	---	---	1.5-2.0	Perched	Jan-Mar	High-----	Moderate.
16---------- Bigbee	A	Occasional	Brief-----	Jan-Mar	3.5-6.0	Apparent	Jan-Mar	Low------	Moderate.
17*: Trebloc----------	D	Occasional	Very brief	Jan-Apr	0.5-1.0	Apparent	Jan-Apr	High-----	High.
Quitman----------	C	Occasional	Very brief to brief.	Dec-May	1.5-2.0	Perched	Jan-Mar	High-----	Moderate.
19*: Harleston--------	C	Occasional	Very brief	Nov-Apr	2.0-3.0	Apparent	Nov-Mar	Moderate	High.
Cahaba----------	B	Occasional	Very brief	Nov-Feb	>6.0	---	---	Moderate	Moderate.
20A---------- Cahaba	B	Occasional	Very brief	Nov-Feb	>6.0	---	---	Moderate	Moderate.
22---------- Annemaine	C	Occasional	Very brief to brief.	Jan-Mar	1.5-2.5	Apparent	Jan-Mar	High-----	High.
24A, 24B---------- Prentiss	C	None--------	---	---	2.0-2.5	Perched	Jan-Mar	Moderate	High.

See footnote at end of table.

TABLE 18.--SOIL AND WATER FEATURES--Continued

Map symbol and soil name	Hydrologic group	Flooding			High water table			Risk of corrosion	
		Frequency	Duration	Months	Depth	Kind	Months	Uncoated steel	Concrete
					Ft				
25A---------- Stough	C	None--------	---	---	1.0-1.5	Perched	Jan-Apr	Moderate	High.
27---------- Trebloc	D	Rare--------	---	---	0.5-1.0	Apparent	Jan-Apr	High-----	High.
28---------- Trebloc	D	Frequent----	Very brief	Jan-Apr	0.5-1.0	Apparent	Jan-Apr	High-----	High.
30B, 30C---------- McLaurin	B	None--------	---	---	>6.0	---	---	Low------	Moderate.
31B, 31C---------- Benndale	B	None--------	---	---	>6.0	---	---	Low------	Moderate.
33A---------- Lucedale	B	None--------	---	---	>6.0	---	---	Moderate	Moderate.
34E---------- Smithdale	B	None--------	---	---	>6.0	---	---	Low------	Moderate.
35B, 35C---------- Ruston	B	None--------	---	---	>6.0	---	---	Moderate	Moderate.
41A, 41B, 41C----- Savannah	C	None--------	---	---	1.5-3.0	Perched	Jan-Mar	Moderate	High.
43B, 43C---------- Malbis	B	None--------	---	---	2.5-4.0	Perched	Dec-Mar	Moderate	Moderate.
46*: Pits.									
Udorthents.									
80*: Susquehanna------	D	None--------	---	---	>6.0	---	---	High-----	High.
Petal----------	C	None--------	---	---	2.5-3.5	Perched	Jan-Apr	High-----	High.
81B, 81C---------- Freest	C	None--------	---	---	1.5-2.5	Apparent	Jan-Apr	High-----	High.
83B, 83D---------- Susquehanna	D	None--------	---	---	>6.0	---	---	High-----	High.
90*: Heidel----------	B	None--------	---	---	>6.0	---	---	Low------	High.
McLaurin---------	B	None--------	---	---	>6.0	---	---	Low------	Moderate.
131*: Trebloc----------	D	Occasional	Very brief	Jan-Apr	0.5-1.0	Apparent	Jan-Apr	High-----	High.
Bibb----------	C	Frequent----	Brief-----	Dec-May	0.5-1.5	Apparent	Dec-Apr	High-----	Moderate.
213, 613---------- Benndale	B	None--------	---	---	>6.0	---	---	Low------	Moderate.
652---------- Susquehanna	D	None--------	---	---	>6.0	---	---	High-----	High.

See footnote at end of table.

TABLE 18.--SOIL AND WATER FEATURES--Continued

Map symbol and soil name	Hydrologic group	Flooding			High water table			Risk of corrosion	
		Frequency	Duration	Months	Depth	Kind	Months	Uncoated steel	Concrete
					Ft				
822---------- Malbis	B	None--------	---	---	2.5-4.0	Perched	Dec-Mar	Moderate	Moderate.
842---------- Freest	C	None--------	---	---	1.5-2.5	Apparent	Jan-Apr	High-----	High.
843---------- Ruston	B	None--------	---	---	>6.0	---	---	Moderate	Moderate.
852---------- Susquehanna	D	None--------	---	---	>6.0	---	---	High-----	High.

* See description of the map unit for composition and behavior characteristics of the map unit.

TABLE 19.--PHYSICAL AND CHEMICAL ANALYSES OF SELECTED SOILS

[Analyzed by the Soil Genesis and Morphology Laboratory of the Mississippi Agricultural and Forestry Experiment Station]

Soil series and sample number	Horizon	Depth	Particle-size distribution			Extractable bases				Extractable Acidity	Sum of cations	Base saturation	Reaction 1:1 Soil:Water	Organic Matter
			Sand (2.0-0.05 mm)	Silt (0.05-0.002 mm)	Clay (<0.002 mm)	Ca	Mg	K	Na					
		In	Pct	Pct	Pct	----------Meg/100 grams----------						Pct	pH	Pct
Annemaine*														
S81MS-067-1	A	0- 6	21.4	58.1	20.5	2.76	1.45	0.49	0.23	12.48	17.41	28.3	4.7	3.2
	Bt1	6-14	3.1	40.5	56.4	3.06	3.16	0.41	0.07	25.51	32.21	20.8	4.3	2.3
	Bt2	14-25	2.8	41.3	55.9	0.82	2.53	0.36	0.09	26.13	29.93	12.6	4.4	1.2
	Bt3	25-43	6.0	44.4	49.6	0.11	1.78	0.35	0.12	26.01	28.37	8.3	4.3	0.9
	BC	43-60	46.1	28.3	25.6	0.02	0.97	0.21	0.06	13.16	14.42	8.7	4.5	0.9
Bigbee*														
S81MS-067-2	Ap	0- 9	86.5	8.3	5.2	0.65	0.12	0.17	0.02	3.62	4.58	20.9	4.6	1.2
	C1	9-38	87.0	7.6	5.4	0.11	0.03	0.04	0.04	2.37	2.59	8.4	4.3	0.2
	C2	38-65	98.9	1.1	0.0	0.04	0.01	0.01	0.02	0.69	0.77	10.3	5.0	0.2
Susquehanna*														
S81MS-067-3	A	0- 5	54.1	42.5	3.4	1.11	0.30	0.07	0.03	7.57	9.08	16.6	4.8	2.2
	E	5-12	49.9	43.4	6.7	0.55	0.23	0.04	0.02	3.77	4.61	18.2	5.0	0.5
	Bt1	12-19	12.3	31.8	55.9	5.06	6.57	0.56	0.47	23.12	35.78	35.3	4.7	0.4
	Bt2	19-26	13.5	34.0	52.5	5.03	6.35	0.46	0.47	22.09	34.40	35.7	4.7	0.3
	Btg1	26-41	25.3	25.6	49.1	5.00	6.17	0.72	0.47	13.13	25.49	48.4	4.6	0.3
	Btg2	41-64	9.4	41.1	49.5	7.41	9.43	1.00	0.80	10.56	29.20	63.8	4.5	0.0

*Location of pedon sampled is the same as given for the typical pedon in the section "Soil Series and Their Morphology."

TABLE 20.--CLASSIFICATION OF THE SOILS

Soil name	Family or higher taxonomic class
Annemaine	Clayey, mixed, thermic Aquic Hapludults
Benndale	Coarse-loamy, siliceous, thermic Typic Paleudults
Bibb	Coarse-loamy, siliceous, acid, thermic Typic Fluvaquents
Bigbee	Thermic, coated Typic Quartzipsamments
Cahaba	Fine-loamy, siliceous, thermic Typic Hapludults
Freest	Fine-loamy, siliceous, thermic Aquic Paleudalfs
Harleston	Coarse-loamy, siliceous, thermic Aquic Paleudults
Heidel	Coarse-loamy, siliceous, thermic Typic Paleudults
Jena	Coarse-loamy, siliceous, thermic Fluventic Dystrochrepts
Lucedale	Fine-loamy, siliceous, thermic Rhodic Paleudults
Malbis	Fine-loamy, siliceous, thermic Plinthic Paleudults
McLaurin	Coarse-loamy, siliceous, thermic Typic Paleudults
Petal	Fine-loamy, siliceous, thermic Typic Paleudalfs
Prentiss	Coarse-loamy, siliceous, thermic Glossic Fragiudults
Quitman	Fine-loamy, siliceous, thermic Aquic Paleudults
Ruston	Fine-loamy, siliceous, thermic Typic Paleudults
Savannah	Fine-loamy, siliceous, thermic Typic Fragiudults
Smithdale	Fine-loamy, siliceous, thermic Typic Hapludults
Stough	Coarse-loamy, siliceous, thermic Fragiaquic Paleudults
Susquehanna	Fine, montmorillonitic, thermic Vertic Paleudalfs
Trebloc	Fine-silty, siliceous, thermic Typic Paleaquults

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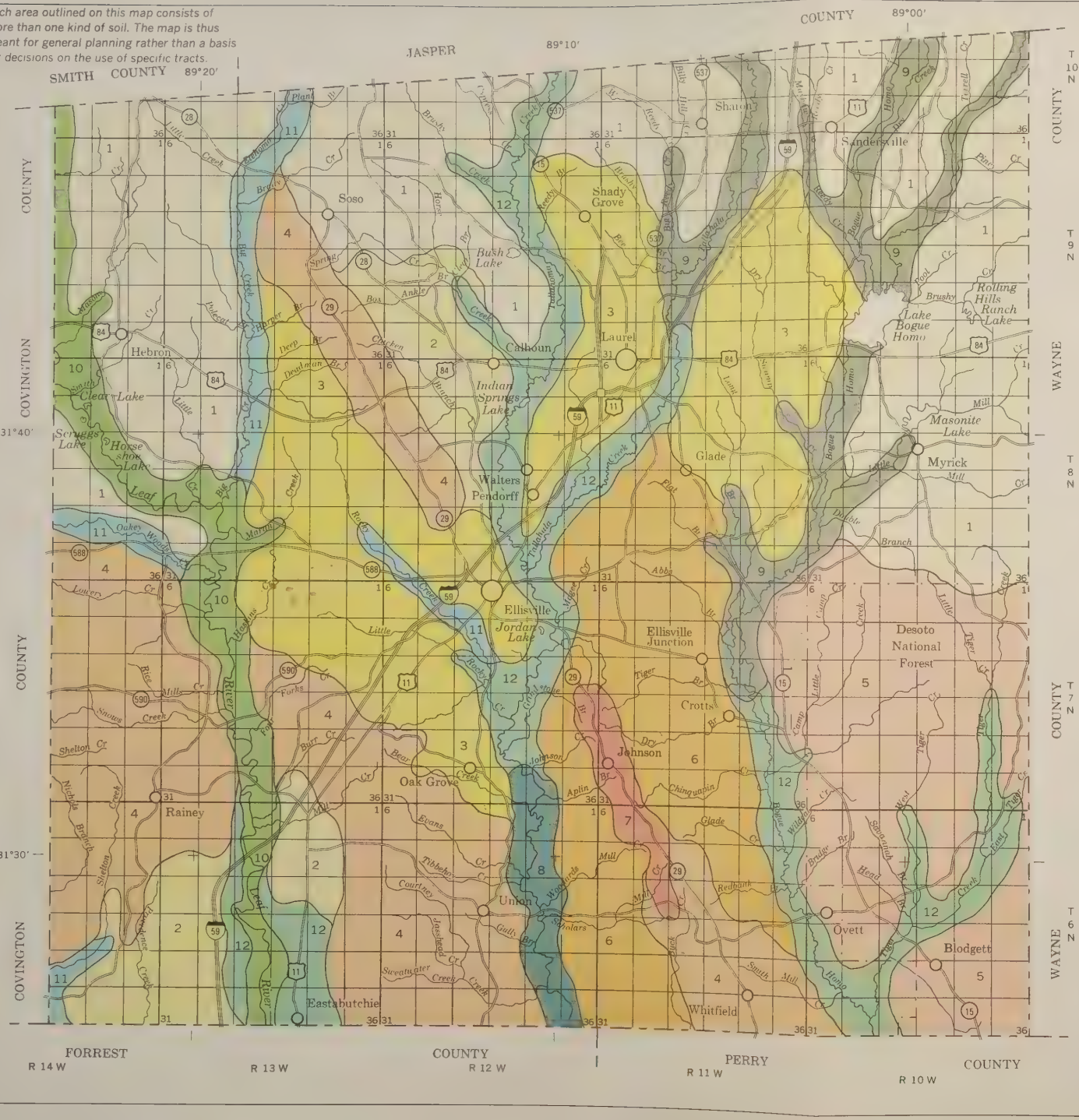
Each area outlined on this map consists of more than one kind of soil. The map is thus meant for general planning rather than a basis for decisions on the use of specific tracts.



LEGEND*

DOMINANTLY NEARLY LEVEL TO STEEP SOILS; ON UPLANDS AND TERRACES

1 — Malbis-Smithdale-Savannah: Loamy, moderately well drained and well drained, nearly level to moderately steep soils; on uplands and terraces

2 — Smithdale-McLaurin-Savannah: Loamy and sandy, well drained and moderately well drained, nearly level to moderately steep soils; on uplands and terraces

3 — Malbis-Savannah: Loamy, moderately well drained, nearly level to sloping soils, on uplands and terraces

4 — Smithdale-McLaurin: Loamy and sandy, well drained, gently sloping to moderately steep soils; on uplands

5 — Susquehanna-Freest-Benndale: Loamy, somewhat poorly drained to well drained, nearly level to moderately steep soils; on uplands

6 — McLaurin-Freest-Susquehanna: Sandy and loamy, well drained to somewhat poorly drained, nearly level to moderately steep soils; on uplands

7 — McLaurin-Heidel: Sandy, well drained, gently sloping to steep soils; on uplands

DOMINANTLY NEARLY LEVEL TO GENTLY SLOPING SOILS; ON TERRACES AND FLOOD PLAINS

8 — Harleston-Cahaba: Loamy, moderately well drained and well drained, nearly level soils; on terraces

9 — Trebloc: Silty, poorly drained, nearly level soils; on terraces and flood plains

10 — Bigbee-Cahaba-Jena: Sandy and loamy, excessively drained and well drained, level to gently sloping soils; on terraces and flood plains

11 — Jena-Prentiss-Bibb: Loamy and silty, well drained, moderately well drained, and poorly drained, nearly level to gently sloping soils; on flood plains and terraces

12 — Trebloc-Quitman: Silty and loamy, poorly drained and moderately well drained, nearly level soils; on terraces and flood plains

*The texture given in the descriptive heading refers to the texture of the surface layer of the major soils in each map unit.

Compiled 1985

SECTIONALIZED TOWNSHIP

6	5	4	3	2	1
7	8	9	10	11	12
18	17	16	15	14	13
19	20	21	22	23	24
30	29	28	27	26	25
31	32	33	34	35	36

N

UNITED STATES DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE
U. S. FOREST SERVICE
MISSISSIPPI AGRICULTURAL AND FORESTRY EXPERIMENT STATION

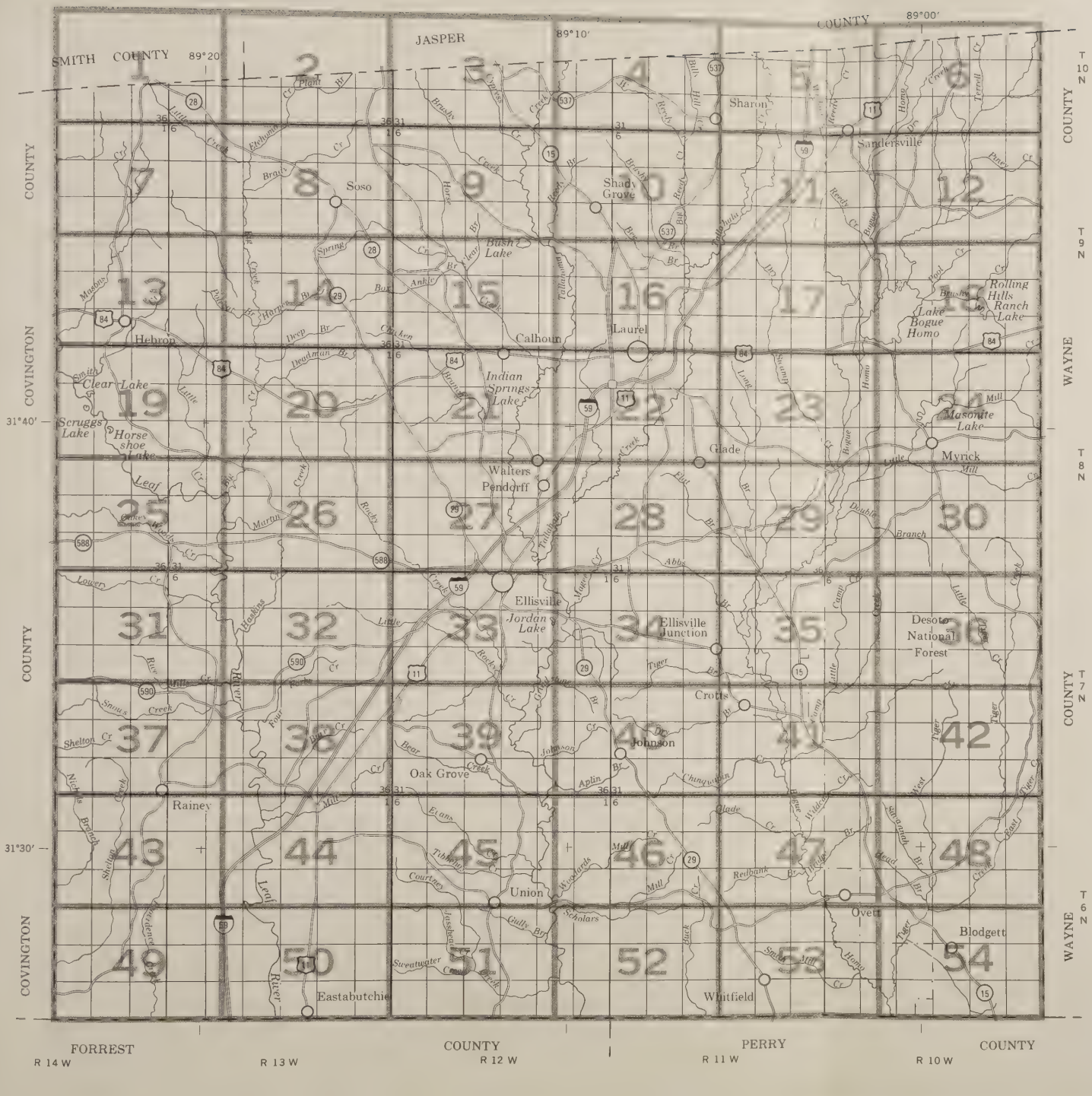
GENERAL SOIL MAP

JONES COUNTY, MISSISSIPPI

Scale 1:190,080

1 0 1 2 3 Miles

1 0 3 6 Km



SECTIONALIZED TOWNSHIP

6	5	4	3	2	1
7	8	9	10	11	12
18	17	16	15	14	13
19	20	21	22	23	24
30	29	28	27	26	25
31	32	33	34	35	36

INDEX TO MAP SHEETS

JONES COUNTY, MISSISSIPPI

Scale 1:190,080

1 0 1 2 3 Miles

1 0 3 6 Km

SOIL LEGEND

Symbols consist of numbers or a combination of numbers and letters. A number consisting of one, two, or three digits represents the kind of soil. In some units the number is followed by a capital letter, such as A, B, or C, that represents the slope. Symbols without a capital letter are either: (1) nearly level soils on flood plains; (2) or map units that are nonarable with a considerable range in slope gradient; (3) or miscellaneous land types; (4) or map units in DeSoto National Forest for management of the U.S. Forest Service Land. Only the map units in DeSoto National Forest have three digits, they are followed by the superscript 2/. These map units were designed primarily for forest management.

Soil names followed by the superscript 1/ are order three units. Fewer soil examinations were made in these map units and delineations and included areas are generally larger. The map units were designed primarily for forest management.

SYMBOL	NAME
2	Jena fine sandy loam, frequently flooded
3	McLaurin-Urban land
4	Malbis-Urban land complex
5	Urban land
6	Bibb silt loam, frequently flooded
7	Savannah-Urban land complex
11E	Heidel-Benndale complex, 8 to 20 percent slopes
15	Quitman fine sandy loam
16	Bigbee loamy sand, occasionally flooded
17	Trebloc-Quitman association, occasionally flooded 1/
19	Harleston-Cahaba association, occasionally flooded 1/
20A	Cahaba sandy loam, occasionally flooded
22	Annemaine silt loam, occasionally flooded
24A	Prentiss loam, 0 to 2 percent slopes
24B	Prentiss loam, 2 to 5 percent slopes
25A	Stough fine sandy loam, 0 to 2 percent slopes
27	Trebloc silt loam
28	Trebloc silt loam, frequently flooded 1/
30B	McLaurin loamy sand, 2 to 5 percent slopes
30C	McLaurin loamy sand, 5 to 8 percent slopes
33A	Lucedale loam, 0 to 2 percent slopes
34E	Smithdale fine sandy loam, 8 to 15 percent slopes
35B	Ruston fine sandy loam, 2 to 5 percent slopes
35C	Ruston fine sandy loam, 5 to 8 percent slopes
41A	Savannah loam, 0 to 2 percent slopes
41B	Savannah loam, 2 to 5 percent slopes
41C	Savannah loam, 5 to 8 percent slopes
43B	Malbis fine sandy loam, 2 to 5 percent slopes
43C	Malbis fine sandy loam, 5 to 8 percent slopes
46	Pits-Udorthents complex
80	Susquehanna-Petal association, rolling 1/
81B	Freest fine sandy loam, 2 to 5 percent slopes
81C	Freest fine sandy loam, 5 to 8 percent slopes
83B	Susquehanna fine sandy loam, 2 to 5 percent slopes
83D	Susquehanna fine sandy loam, 5 to 12 percent slopes
90	Heidel-McLaurin association, hilly 1/
131	Trebloc silt loam and Bibb fine sandy loam, occasionally and frequently flooded 2/
213	Benndale fine sandy loam, undulating
613	Benndale fine sandy loam, rolling 2/
652	Susquehanna fine sandy loam, rolling 2/
822	Malbis fine sandy loam, undulating 2/
842	Freest fine sandy loam, undulating 2/
843	Ruston fine sandy loam, undulating 2/
852	Susquehanna fine sandy loam, undulating 2/

CONVENTIONAL AND SPECIAL SYMBOLS LEGEND

CULTURAL FEATURES

BOUNDARIES

- National, state or province
- County or parish
- Minor civil division
- Reservation (national forest or park, state forest or park, and large airport)
- Land grant
- Limit of soil survey (label)
- Field sheet matchline & neatline

AD HOC BOUNDARY (label)

- Small airport, airfield, park, oilfield, cemetery, or flood pool

STATE COORDINATE TICK

LAND DIVISION CORNERS (sections and land grants)

ROADS

- Divided (median shown if scale permits)
- Other roads
- Trail

ROAD EMBLEM & DESIGNATIONS

- Interstate
- Federal
- State
- County, farm or ranch

RAILROAD

POWER TRANSMISSION LINE (normally not shown)

PIPE LINE (normally not shown)

FENCE (normally not shown)

LEVEES

- Without road
- With road
- With railroad

DAMS

- Large (to scale)
- Medium or small

PITS

- Gravel pit
- Mine or quarry

MISCELLANEOUS CULTURAL FEATURES

- Farmstead, house (omit in urban areas)
- Church
- School
- Indian mound (label)
- Located object (label)
- Tank (label)
- Wells, oil or gas
- Windmill
- Kitchen midden

WATER FEATURES

DRAINAGE

- Perennial, double line
- Perennial, single line
- Intermittent
- Drainage end
- Canals or ditches
  - Double-line (label)
  - Drainage and/or irrigation

LAKES, PONDS AND RESERVOIRS

- Perennial
- Intermittent

MISCELLANEOUS WATER FEATURES

- Marsh or swamp
- Spring
- Well, artesian
- Well, irrigation
- Wet spot

SPECIAL SYMBOLS FOR SOIL SURVEY

SOIL DELINEATIONS AND SYMBOLS

ESCARPMENTS

- Bedrock (points down slope)
- Other than bedrock (points down slope)

SHORT STEEP SLOPE

GULLY

DEPRESSION OR SINK

SOIL SAMPLE SITE (normally not shown)

MISCELLANEOUS

- Blowout
- Clay spot
- Gravelly spot
- Gumbo, slick or scabby spot (sodic)
- Dumps and other similar non soil areas
- Prominent hill or peak
- Rock outcrop (includes sandstone and shale)
- Saline spot
- Sandy spot
- Severely eroded spot
- Slide or slip (tips point upslope)
- Stony spot, very stony spot


325 000 FEET
R. 14 W.
R. 13 W.
SMITH COUNTY
PREV. BOUNDARY
COVINGTON COUNTY T. 10 N.
OLD INDIAN TREATY BOUNDARY
Little ILLINOIS CENTRAL GULF OIL
Mill Creek
(Joins sheet 2)
(Joins sheet 7)
345 000 FEET
N
1 Mile
5000 Feet
Scale 1:20000


2
N
R. 13 W.
T. 10 N.
1 Mile
5000 Feet
Scale 1:20000
SMITH COUNTY
JASPER COUNTY
OLD INDIAN TREATY BOUNDARY
GAS
OIL
Creek
Plant
Branch
Elehomo
(Joins sheet 1)
(Joins sheet 8)
(Joins sheet 3)
25
26
27
28
29
32
33
34
35
36


375 000 FEET
R. 12 W.
JASPER COUNTY
OLD INDIAN TREATY BOUNDARY
T. 10 N.
Brushy Creek
Cypress Creek
Terrapin Creek
Old Creek
TALLAHOMA CREEK
29
28
27
26
30
31
32
33
34
35
(Joins sheet 2)
(Joins sheet 4)
(Joins sheet 9)
390 000 FEET
N
1 Mile
5000 Feet
Scale 1:20000


4
N
1 Mile
5000 Feet
Scale 1:20000
0
1000
2000
3000
4000
5000
415 000 FEET
395 000 FEET
R. 12 W.
R. 11 W.
JASPER COUNTY
T. 10 N.
OLD INDIAN TREATY BOUNDARY
(Joins sheet 3)
(Joins sheet 10)
(Joins sheet 5)
Oklahoma Cr.
ILLINOIS
CENTRAL
GULF
OIL
GAS
West
Reedy
Reedy
Billy
Hill
Black
Creek
Creek
water
Sharon
25
26
30
29
28
21
20
35
36
31
32
33
537


1420 000 FEET
JASPER COUNTY
OLD INDIAN TREATY BOUNDARY
R. 11 W.
R. 10 W.
T. 10 N.
Bonner
Sandersville
Creek
Tallahala
Reedy
Kelly
Branch
Moughaw
GAS
OIL
SOUTHERN
ALABAMA
(Joins sheet 4)
(Joins sheet 6)
(Joins sheet 11)
1440 000 FEET
N
1 Mile
5000 Feet
Scale 1:20000


6
N
R. 10 W.
JASPER COUNTY
WAYNE COUNTY
T. 10 N.
Haney
Haney Branch
Dry Creek
HOMO
Terrell Gas Creek
Homo Creek
Hubbard
Bogue
Little
BOGUE
SOUTHERN
GREAT
ALABAMA
OLD INDIAN TREATY BOUNDARY
Water
(Joins sheet 5)
(Joins sheet 12)
1 Mile
5000 Feet
Scale 1:20000
445 000 FEET
465 000 FEET

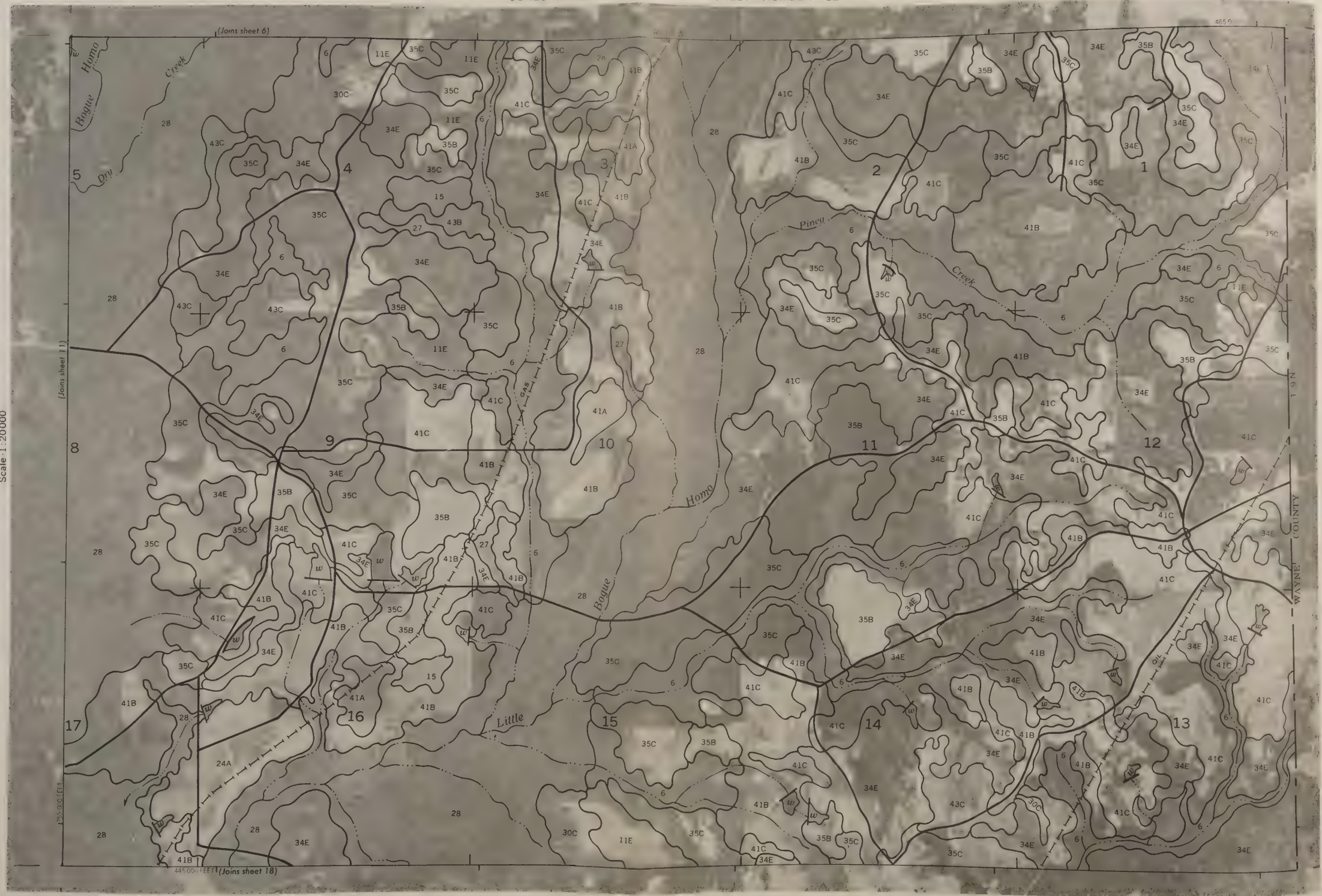

R 14 W.
R. 13 W.
T 9 N.
T. 9 N.
COVINGTON COUNTY
(Joins sheet 1)
(Joins sheet 8)
(Joins sheet 13)
Little Creek
Reed
Brake
Branch
Scale 1:20000
1 Mile
5000 Feet
N


N
1 Mile
5000 Feet
Scale · 1:20000
(Joins sheet 2)
R 13 W
T 9 N.
Gitano
Mill Creek
Etehoma Creek
Little Creek
Brady
ILLINOIS CENTRAL
Soso
GULF
Spring Creek
Big Creek
(Joins sheet 7)
(Joins sheet 9)
(Joins sheet 14)
350 000 FEET
355 000 FEET
370 000 FEET


(Joins sheet 3)
(Joins sheet 8)
(Joins sheet 10)
(Joins sheet 15)
T. 9 N
Horse Creek
Horse Creek
Cypress Creek
Tallahoma Creek
Tallahoma Branch
Reedy Branch
Clear Creek
Bush Lake
Springhill
Gas
Water
N
1 Mile
5000 Feet
Scale 1:20000


10
N
R 12 W
R 11 W
(Joins sheet 4)
(Joins sheet 9)
(Joins sheet 16)
(Joins sheet 11)
Scale 1:20000
1 Mile
5000 Feet
Hoy
Shady Grove
Reedy Branch
West Reedy Creek
Billy Hill Reedy Creek
Big Reedy Creek
ILLINOIS CENTRAL GAS
GULF COAST
water


R. 11 W.
R. 10 W.
T. 9 N.
(Joins sheet 5)
(Joins sheet 12)
(Joins sheet 10)
(Joins sheet 17)
Sandersville
Hawkes
Mount Olive
Errata
Dead Lake
Old Lake
Tallahala Creek
Reedy Branch
Kirkendall Creek
Bogue Homo
Homo Creek
Dry Bogue
Bogue Homo Creek
SOUTHERN
GREAT
ALABAMA
1 Mile
5000 Feet
Scale 1:20000


12
N
1 Mile
5000 Feet
Scale 1:20000
(Joins sheet 6)
(Joins sheet 11)
(Joins sheet 18)
WAYNE COUNTY
Homo
Bogue
Dry
Creek
Piney
Little
GAS
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17


R 14 W
R 13 W
T 9 N
COVINGTON COUNTY
(Joins sheet 7)
(Joins sheet 14)
(Joins sheet 19)
Hebron
Masons Creek
Smith Creek
Little Creek
Reed Brake Br.
Pulpit Branch
LEAF RIVER
water
Scale 1:20000
1 Mile
5000 Feet
13
N


(14)
N
R 13 W.
T 9 N
(Joins sheet 8)
(Joins sheet 13)
(Joins sheet 15)
(Joins sheet 20)
Scale · 1:20000
1 Mile
5000 Feet
Big Reed Brake
Spring Creek
Polecat Branch
Harper Creek
Mauhee Branch
Deep Branch
Chicken Branch
GAS
20
21
22
23
24
25
26
27
28
29
32
33
34
35
36


15
N
Scale 1:20000
1 Mile
5000 Feet
(Joins sheet 9)
(Joins sheet 14)
(Joins sheet 16)
(Joins sheet 21)
T. 9 N.
R. 12 W.
Bush Lake
LAND FILL
LAND FILL
TALLAHOMA CREEK
Branch
Spring
Creek
Horse
Branch
Service
ILLINOIS
Clear
Creek
Branch
GAS
CENTRAL
GULF
Horse
Creek
water
Ankle
Box
Butler
Branch
Chicken
Branch
Calhoun
Flint
19
20
21
22
23
26
27
28
29
30
31
32
33
34
35


(Joins sheet 10)
R 12 W
R 11 W.
415 000 FEET
Big Reedy Cr.
Brushy
Branch
Bee
Branch
SOUTHERN
CREEK
GULF
GREAT
CENTRAL
ILLINOIS
ALABAMA
Mason Memorial Park
water
LAND FILL
LAND FILL
SEWAGE LAGOON
SL
SL
TALLAHOMA
CREEK
TALLAHALA
CREEK
LAUREL
Eastview
(Joins sheet 15)
(Joins sheet 17)
(Joins sheet 22)
N 61
Scale 1:20000
1 Mile
5,000 Feet
0
1000
2000
3000
4000
5000

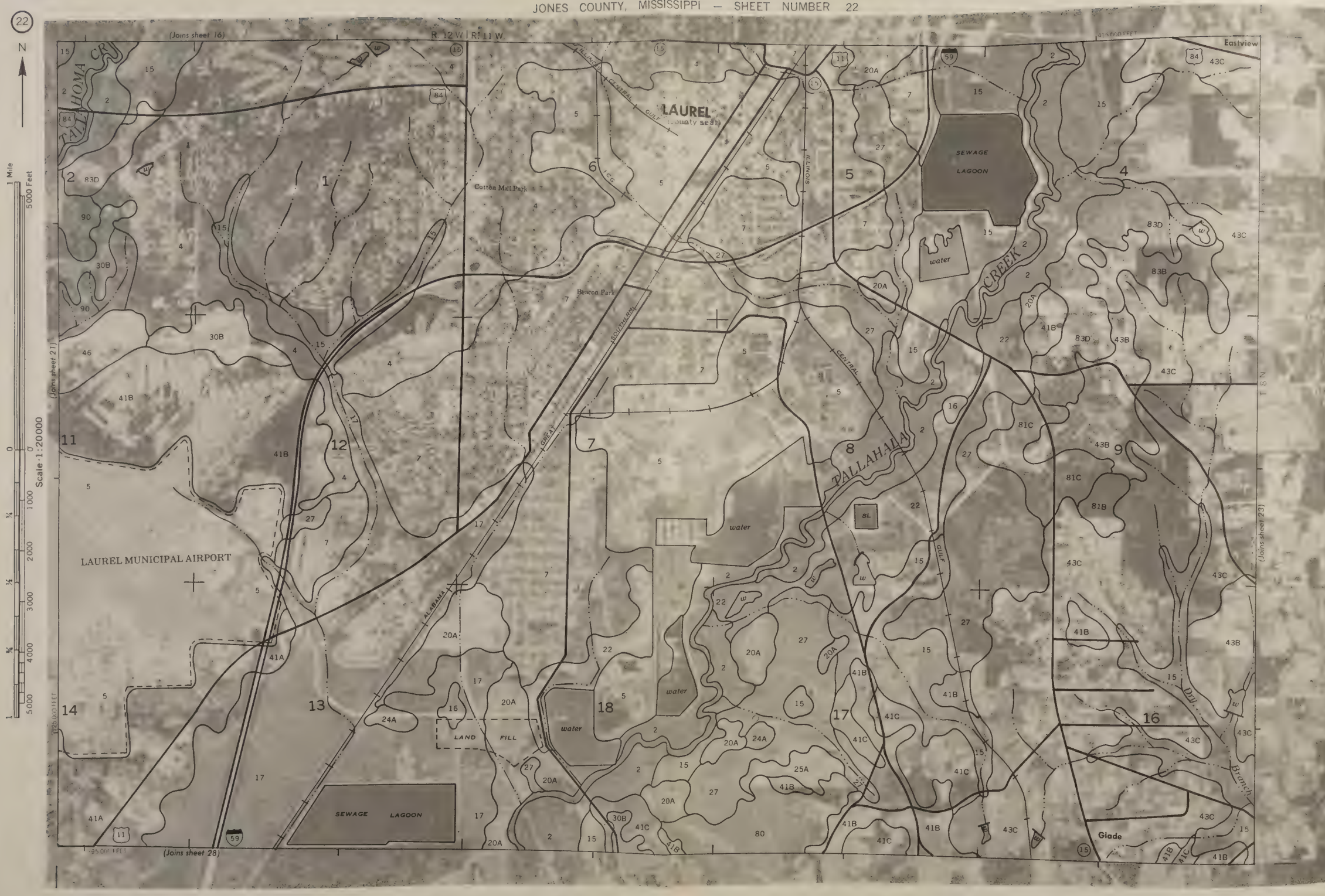

R 11 W
R 10 W
T 9 N
(Joins sheet 11)
(Joins sheet 16)
(Joins sheet 18)
(Joins sheet 23)
Tallahala Creek
Creek
Swamp
Dry
Bogue
Cheelu
Reedy
LAKE BOGUE HOMO
Homo
Eastview
Powers
Cleo
22
23
24
19
20
27
26
25
30
29
34
35
36
31
32
Scale 1:20000
1 Mile
5000 Feet


18
N
1 Mile
5000 Feet
Scale 1:20000
(Joins sheet 12)
(Joins sheet 17)
(Joins sheet 24)
R 10 W
T 9 N
WAYNE COUNTY
Little Bogue
Homo
Creek
Rawly Creek
BOGUE HOMO
BOGUE LAKE
Pool Creek
Brushy Creek
Rolling Hills Ranch Lake
Gum Branch
Jenkins Branch
Mill Creek
Pineview
water
20
21
22
23
24
25
26
27
28
29
32
33
34
35
36


R. 14 W.
R. 13 W
(Joins sheet 13)
(Joins sheet 20)
(Joins sheet 25)
T. 8 N.
COVINGTON COUNTY
LEAF RIVER
Smith Creek
Speed Lake
Clear Lake
Scruggs Lake
Horseshoe Lake
water
Little Creek
Gas Branch
Drill
1 Mile
5000 Feet
Scale 1:20000
N


(Joins sheet 14)
(Joins sheet 19)
(Joins sheet 21)
(Joins sheet 26)
Scale 1:20000
1 Mile
5000 Feet
Deep Branch
Deadman Creek
Mill Creek
Big Creek
South Fork
Morgan Creek
Rocky Creek
GAS
84
29
T 8 N


21
N
(Joins sheet 15)
(Joins sheet 20)
(Joins sheet 22)
(Joins sheet 27)
Calhoun
LAUREL
(county seat)
LAND FILL
LAUREL
MUNICIPAL
AIRPORT
Indian Springs Lake
Pleasant Ridge
Pendorff
T. 8 N.
375 000 FEET
715 000 FEET
725 000 FEET
Chicken Creek
Mill Creek
Romey Branch
Bush Branch
Joes Branch
TALLAHOMA CREEK
1 Mile
5000 Feet
Scale 1:20000


22
N
(Joins sheet 16)
R. 12 W | R. 11 W
LAUREL
(County seat)
Eastview
Glade
Cottön Mill Park
Beacon Park
LAUREL MUNICIPAL AIRPORT
SEWAGE LAGOON
SEWAGE LAGOON
LAND FILL
water
water
water
water
SL
TALLAHALA CREEK
TALLAHOMA CR
ILLINOIS CENTRAL GULF
ILLINOIS CENTRAL
SOUTHERN
GREAT
ALABAMA
GULF
Dry Branch
(Joins sheet 21)
(Joins sheet 23)
(Joins sheet 28)
T 5 N
1 Mile
5000 Feet
Scale 1:20000


23
N
(Joins sheet 17)
(Joins sheet 22)
(Joins sheet 24)
(Joins sheet 29)
R 11 W | R 10 W
T 8 N
Eastview
Glaston
Long Branch
Channel Branch
Dry Creek
Swamp Creek
Blacksnake Creek
BOGUE HOMO
Kashee Branch
Buck Branch
Dry Branch
Gladewater Branch
GAS
1 Mile
5000 Feet
Scale 1:20000


24
N
1 Mile
5000 Feet
Scale 1:20000
(Joins sheet 18)
(Joins sheet 23)
(Joins sheet 30)
465 000 FEET
445 000 FEET
T 8 N
WAYNE COUNTY
Mill Creek
Branch
Creek
Lake
Masonite
Myrick
Mill
Little Mill
water

JONES COUNTY, MISSISSIPPI — SHEET NUMBER 25


26
N
(Joins sheet 20)
(Joins sheet 25)
(Joins sheet 27)
(Joins sheet 32)
R 13 W
T 8 N
Big LEAF RIVER
LEAF RIVER
Creek
Rocky Creek
Rocky Creek
Marina Creek
Hoskins Creek
Mount Zion
Sand Hill
20
21
22
23
24
25
26
27
28
29
32
33
34
35
36
1 Mile
5000 Feet
Scale 1:20000
1 0 1
¼ 0 ¼
½ 1000 0 ½
¾ 2000 1000 ¾
1 3000 2000 1
4000 3000
5000 4000
20000 FEET
5000
15000 FEET


28
N
(Joins sheet 22)
R. 12 W.
R. 11 W.
T 8 N.
(Joins sheet 27)
(Joins sheet 29)
(Joins sheet 34)
Walters
Glade
TALLAHALA CREEK
Creek
Branch
Magee
Hogpen
Abbs
Flat
water
SOUTHERN
GREAT
ALABAMA
ILLINOIS
CENTRAL
GULF
1 Mile
5000 Feet
Scale 1:20000
1000 0 1000 2000 3000 4000 5000 FEET
5000 0 5000 FEET


(Joins sheet 23)
(Joins sheet 28)
(Joins sheet 30)
(Joins sheet 35)
NATIONAL FOREST BOUNDARY
Antioch
Tuckers Crossing
Long Branch
Glade Branch
Dry Branch
Place Branch
Flat Branch
Dry Creek
Swamp Creek
Buck Mill Creek
Double Branch
Mill Creek
HOMO BOGUE
Old
GAS
OIL
CENTRAL
ILLINOIS
T 8 N
R 11 W
Scale 1:20000
1 Mile
5000 Feet
0
1000
2000
3000
4000
5000
N
19
20
22
23
24
25
26
27
29
30
31
32
34
35
36


30
N
1 Mile
5000 Feet
Scale - 1 : 20000
(Joins sheet 24)
(Joins sheet 29)
(Joins sheet 36)
R 10 W
T 8 N
WAYNE COUNTY
Mill Creek
Little Mill Creek
Double Branch
Little Tiger Cr
Tiger Creek
Water
NATIONAL FOREST BOUNDARY
20
21
22
23
24
25
26
27
28
29
32
33
34
35
36
43C
43B
34E
41B
24B


(Joins sheet 25)
R. 14 W. | R. 13 W.
(Joins sheet 32)
(Joins sheet 37)
COVINGTON COUNTY
T. 7 N.
LEAF RIVER
Lowery Creek
Tisdale Branch
Rice Mill Creek
Shows Creek
Woods Cr.
GAS
590
1 Mile
5000 Feet
Scale 1:20000
0
1000
2000
3000
4000
5000
1
2
3
5
6
7
8
10
11
12
13
14
15
17
18
31


32
N
(Joins sheet 26)
R. 13 W.
T 7 N
(Joins sheet 31)
(Joins sheet 33)
350 000 FEET (Joins sheet 38)
1 Mile
5000 Feet
Scale-1:20000
Leaf River
Hoskins Creek
Little Rocky Creek
Gandy Branch
Mill Creek
Four Forks
Creek
Branch


(Joins sheet 28)
R 12 W.
R 11 W.
415 000 FEET
T. 7 N.
(Joins sheet 33)
(Joins sheet 35)
(Joins sheet 40)
395 000 FEET
Scale 1:20000
1 Mile
5000 Feet
N
TALLAHALA Creek
Magee
Jenkins
Pecan Grove
Gator Branch
Abbs Branch
Big Sand Branch
Grindstone Branch
Tiger Branch
CREEK
Lanham
Ellisville Junction
water


R. 11 W
R. 10 W.
T. 7 N.
(Joins sheet 29)
(Joins sheet 34)
(Joins sheet 36)
(Joins sheet 41)
DESOTO
NATIONAL
FOREST
Jones County Lake
Lanham
Abbs Central
Long Branch
Gator Branch
Tiger Branch
Little Creek
Camp Creek
BOGUE
HOMO
Scale 1:20000
1 Mile
5000 Feet


36
N
1 Mile
5000 Feet
Scale 1:20000
(Joins sheet 30)
(Joins sheet 35)
(Joins sheet 42)
R 10 W
T 7 N
WAYNE COUNTY
DESOTO NATIONAL FOREST
Tiger Creek
Gas


R. 14 W.
R. 13 W.
(Joins sheet 31)
(Joins sheet 38)
(Joins sheet 43)
COVINGTON COUNTY
T. 7 N.
Mill Creek
Rice
Swans Creek
West Fork
Shelton Creek
Nichols Branch
Bynum Gates
Raleigh
GAS
1 Mile
5000 Feet
Scale 1:20000


38
N
1 Mile
5000 Feet
Scale · 1:20000
(Joins sheet 32)
(Joins sheet 37)
(Joins sheet 39)
(Joins sheet 44)
R. 13 W.
T. 7 N.
Snows Cr
Four Forks
LEAF
RIVER
Branch
Burr
Gas Creek
Great Mill
Creek
Alabama
Southern
water
20
21
22
23
24
25
26
27
28
29
32
33
34
35
36


T 7 N.
12 W.
(Joins sheet 33)
(Joins sheet 38)
(Joins sheet 40)
(Joins sheet 45)
Benson
Tawanta
Oak Grove
Tower
ALABAMA
GREAT SOUTHERN
Dry Branch
Bear Creek
Rocky Creek
TALLAHALA Creek
Gumstump Branch
TALLAHALA Johnson Creek
CREEK
1 Mile
5000 Feet
Scale · 1:20000

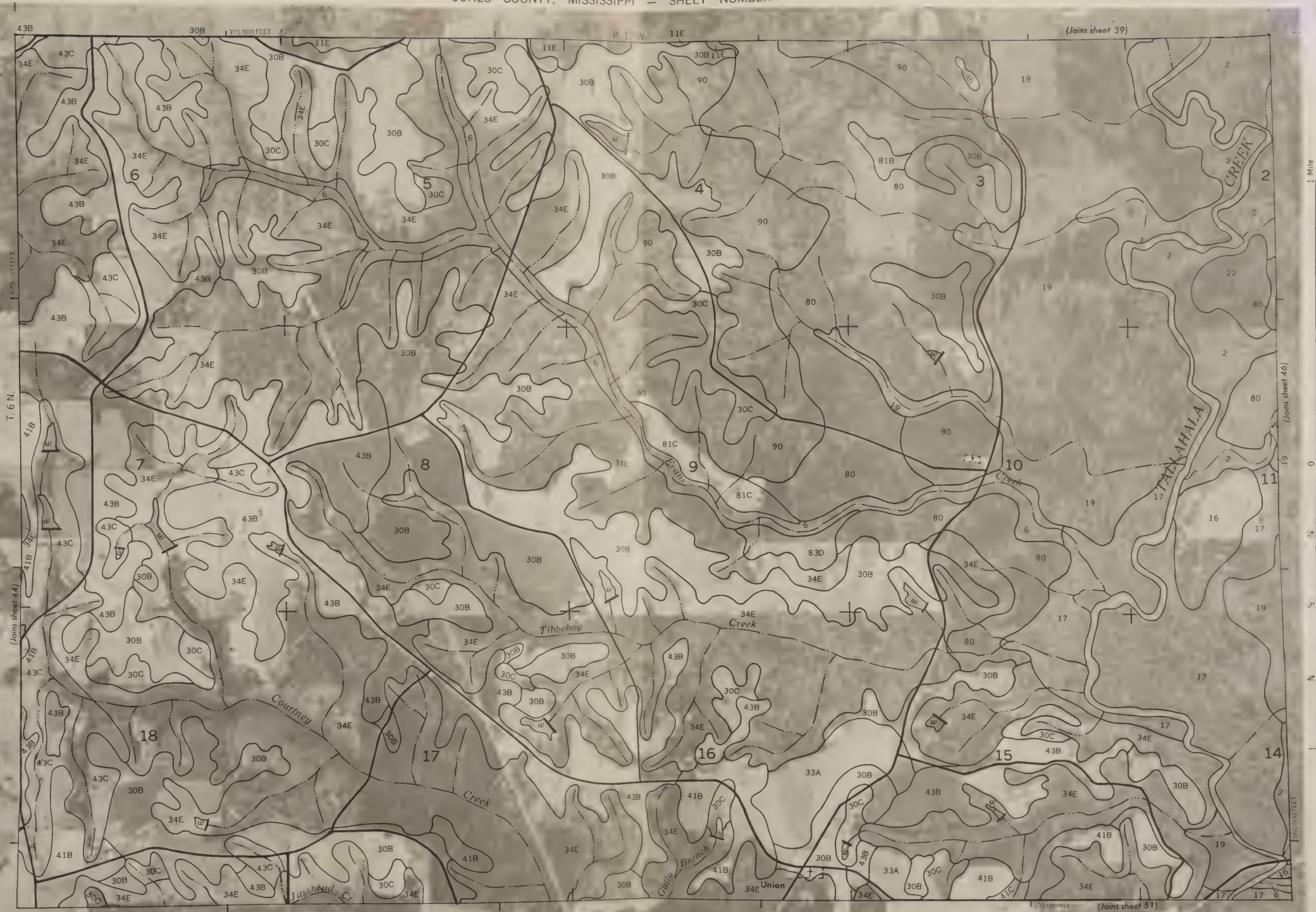

40
N
1 Mile
5000 Feet
Scale 1:20000
0
1000
2000
3000
4000
5000
(Joins sheet 34)
R. 12 W. | R. 11 W.
(Joins sheet 39)
(Joins sheet 41)
(Joins sheet 46)
Grindstone
Branch
Creek
Johnson
Dry
Creek
Branch
Chinquapin
Creek
Aplin
Branch
Johnson
GAS
19
20
21
23
24
25
26
28
29
30
31
32
33
35
36
395 000 FEET


R 11 W
R 10 W
(Joins sheet 35)
(Joins sheet 40)
(Joins sheet 42)
(Joins sheet 47)
T. 7 N.
Crotts
Tallahomo
DESOTO
NATIONAL
FOREST
Dry Creek
Camp Creek
Little Cowpen Creek
Chinquapin Creek
Lindsey Creek
HOMO
BOGUE
ILLINOIS CENTRAL GULF
GAS
water
1 Mile
5000 Feet
Scale 1:20000


42
N
(Joins sheet 36)
R. 10 W
(Joins sheet 41)
DESOTO
NATIONAL FOREST
WAYNE COUNTY
T 7 N.
Tiger Creek
Tiger Creek
Tiger Creek
West
East
GAS
93D
81C
(Joins sheet 48)
445 000 FEET
675 000 FEET
1 Mile
5000 Feet
Scale 1:20000

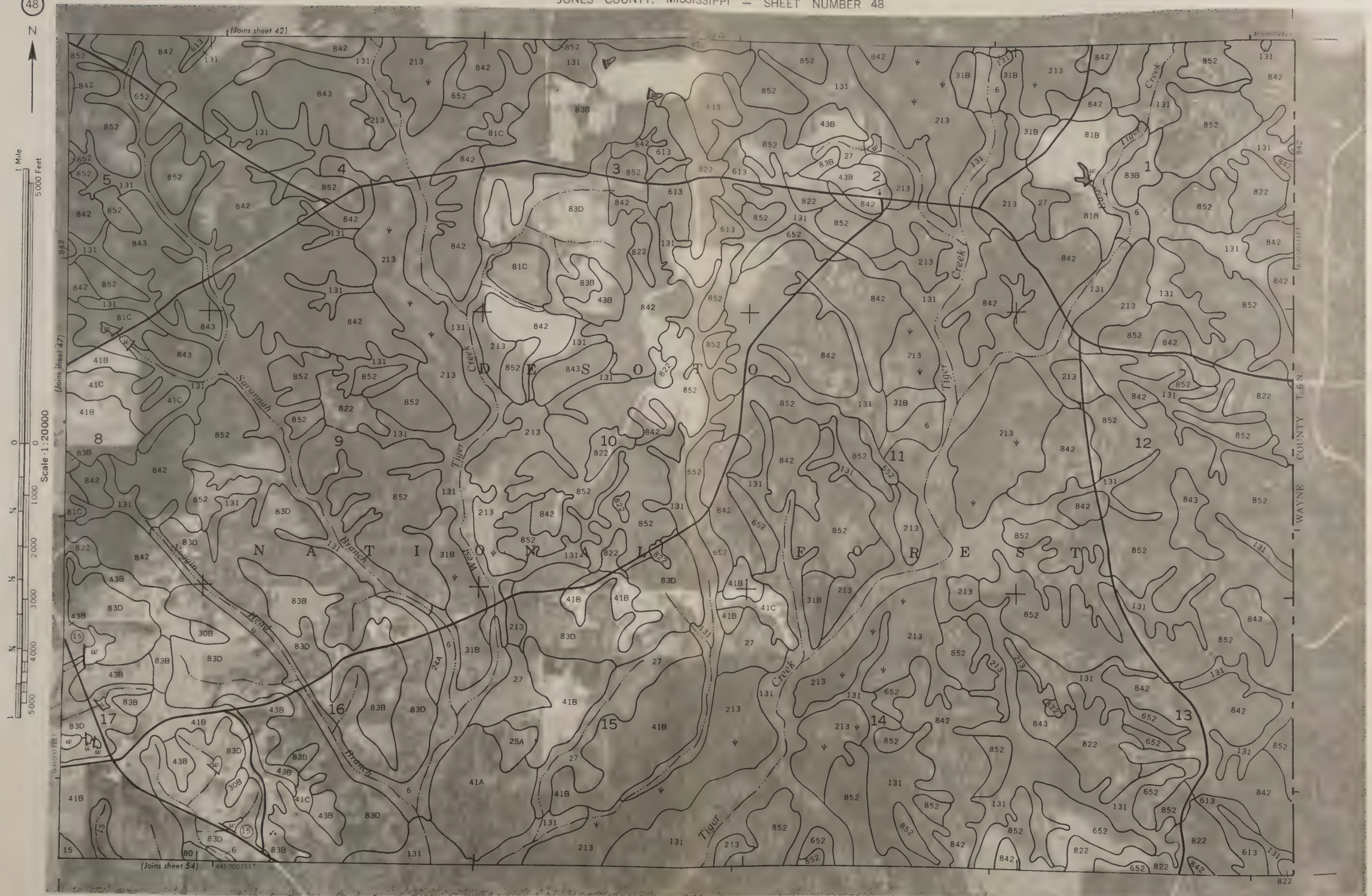
JONES COUNTY, MISSISSIPPI — SHEET NUMBER 43


(Joins sheet 38)
R 13 W
370 000 FEET
water
Burt Creek
Mill Creek
LEAF RIVER
Parker Creek
Moselle
Albeison
SOUTHERN
GREAT
ALABAMA
Thomas Creek
Barlow Branch
GAS
N 91
(Joins sheet 43)
(Joins sheet 45)
350 00 FEET (Joins sheet 50)
1 Mile
5000 Feet
Scale 1:20000


(Joins sheet 39)
(Joins sheet 46)
(Joins sheet 44)
(Joins sheet 51)
T. 6 N.
R. 11 E.
375 000 FEET
CREEK
TAKAHALA
Creek
Tibbehoy
Creek
Courtney
Creek
Jughead Cr.
Crally Branch
Union
1 Mile
5000 Feet
Scale 1:20000
N


46
N
1 Mile
5000 Feet
Scale 1:20000
(Joins sheet 40)
R. 12 W.
R. 11 W.
(Joins sheet 45)
(Joins sheet 47)
(Joins sheet 52)
T 6 N
Creek
Mill
Woodards
Shotaw
Glade
Buck
Gas
water


R 11 W.
R 10 W.
T. 6 N.
(Joins sheet 41)
(Joins sheet 46)
(Joins sheet 48)
(Joins sheet 53)
Monarch
Glade
Redbank
Fox
Ovett
Bridge
Hall
Wildcat
HOMO
Creek
Branch
Lancaster Br
ILLINOIS
CENTRAL
GULF
GAS
OIL
D E S O T O
N A T I O N A L
F O R E S T
1 Mile
5000 Feet
Scale · 1:20000


N
(Joins sheet 42)
(Joins sheet 47)
(Joins sheet 54)
1 Mile
5000 Feet
Scale 1:20000
445 000 FEET
DESOTO NATIONAL FOREST
Tiger Creek
Savannah Branch
Branch
Creek
T. 6 N.
WAYNE COUNTY


R. 14 W.
R. 13 W.
(Joins sheet 43)
T. 6 N.
COVINGTON COUNTY
FORREST COUNTY
PINE BELT
REGIONAL
AIRPORT
LANDFILL
Shelton Creek
Creek
Poulidance
Punch Branch
ILLINOIS CENTRAL GULF
(Joins sheet 50)
N
Scale 1:20000
1 Mile
5000 Feet
0
1000
2000
3000
4000
5000
19
20
22
23
24
25
26
27
29
30
31
32
34
35
36


50
N
Scale 1:20000
1 Mile
5000 Feet
(Joins sheet 44)
(Joins sheet 49)
(Joins sheet 51)
R. 13 W.
T. 6 N.
370 000 FEET
655 000 FEET
645 000 FEET
350 000 FEET
20
21
22
23
24
25
26
27
28
29
32
33
34
35
36
Branch
Barlow
RIVER
LEAF
Punch
SOUTHERN
GREAT
ALABAMA
GAS
TOWER
Eastabuchie
FORREST COUNTY


R 12 W
T. 6 N.
(Joins sheet 45)
(Joins sheet 50)
(Joins sheet 52)
FORREST COUNTY
Jasshead Creek
Courtney Creek
Sweetwater Creek
Gully Branch
TALLAHALA CREEK
GAS
water
19
20
21
22
23
26
27
28
29
30
31
32
33
34
35
N
1 Mile
5000 Feet
Scale - 1:20000


N
1 Mile
5000 Feet
Scale 1:20000
(Joins sheet 46)
R. 12 W.
R. 11 W.
415 000 FEET
685 000 FEET
645 000 FEET
395 000 FEET
T. 6 N.
(Joins sheet 51)
(Joins sheet 53)
Sholars Mill Creek
TALLAHALA CREEK
Creek
Smith
Dry Prong
Creek
water
water
water
FORREST COUNTY
PERRY COUNTY
23
24
19
20
21
25
26
30
29
28
35
36
31
32
33


420 000 FEET
R. 11 W.
R. 10 W.
(Joins sheet 47)
655 000 FEET
T. 6 N.
(Joins sheet 52)
(Joins sheet 54)
645 000 FEET
440 000 FEET
PERRY COUNTY
Whitfield
Lancaster Branch
Smith Mill Creek
BOGUE HOMO
DESOTO NATIONAL FOREST
ILLINOIS CENTRAL GULF R.R.
N
1 Mile
5000 Feet
Scale 1:20000

This map is compiled on 1976 aerial photography by the U. S. Department of Agriculture, Soil Conservation Service and cooperating agencies.
Coordinate grid ticks and land division corners, if shown, are approximately positioned.